550

The PHOTOFACT® Servicer

SET 550 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ OCT. 1961

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This Servicer provides you with essential data on other models or special equipment not covered in standard PHOTOFACT folders. The schematics and supplementary data included here will be of valuable help to you in servicing this equipment.

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Capitol Model
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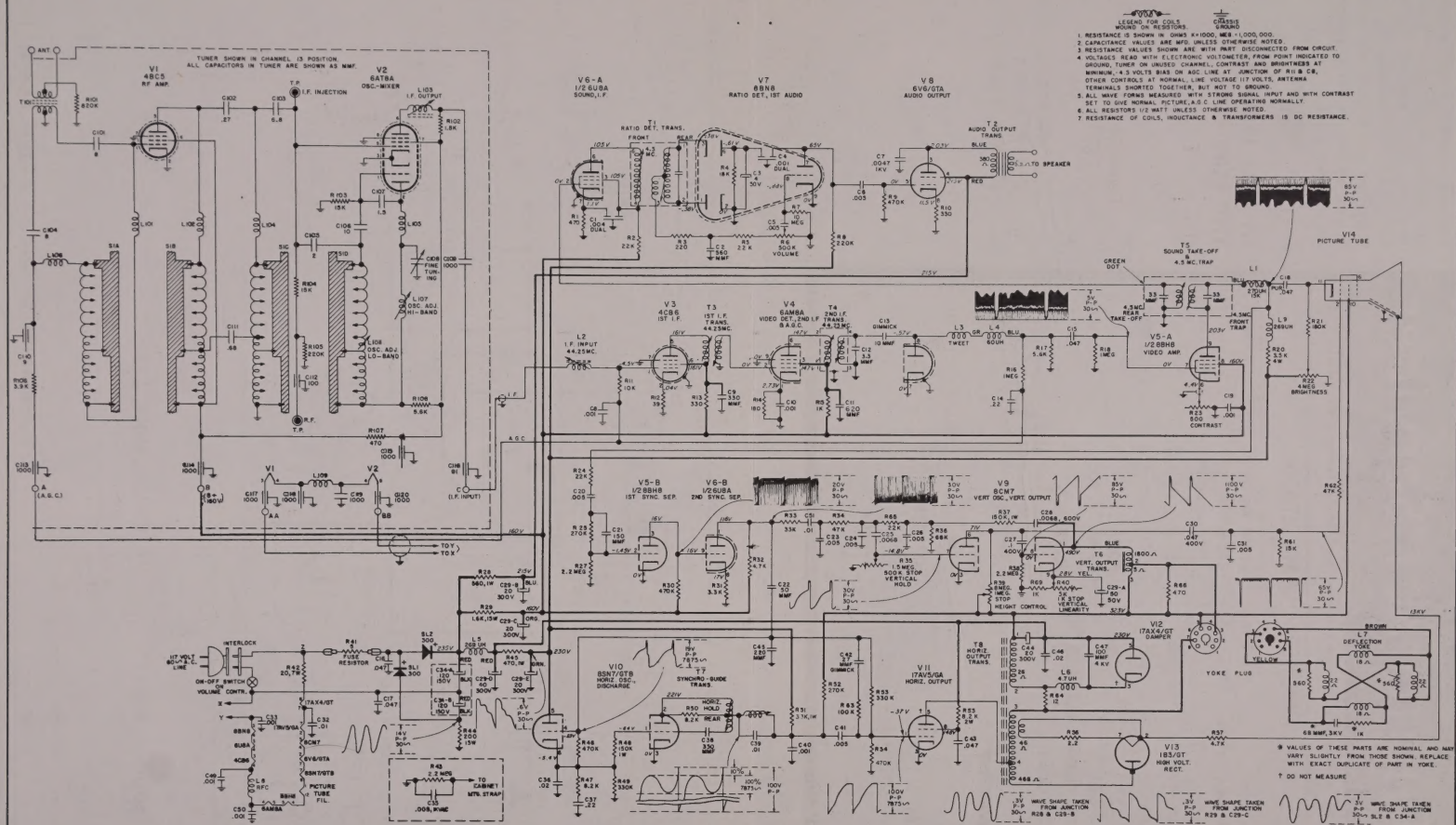
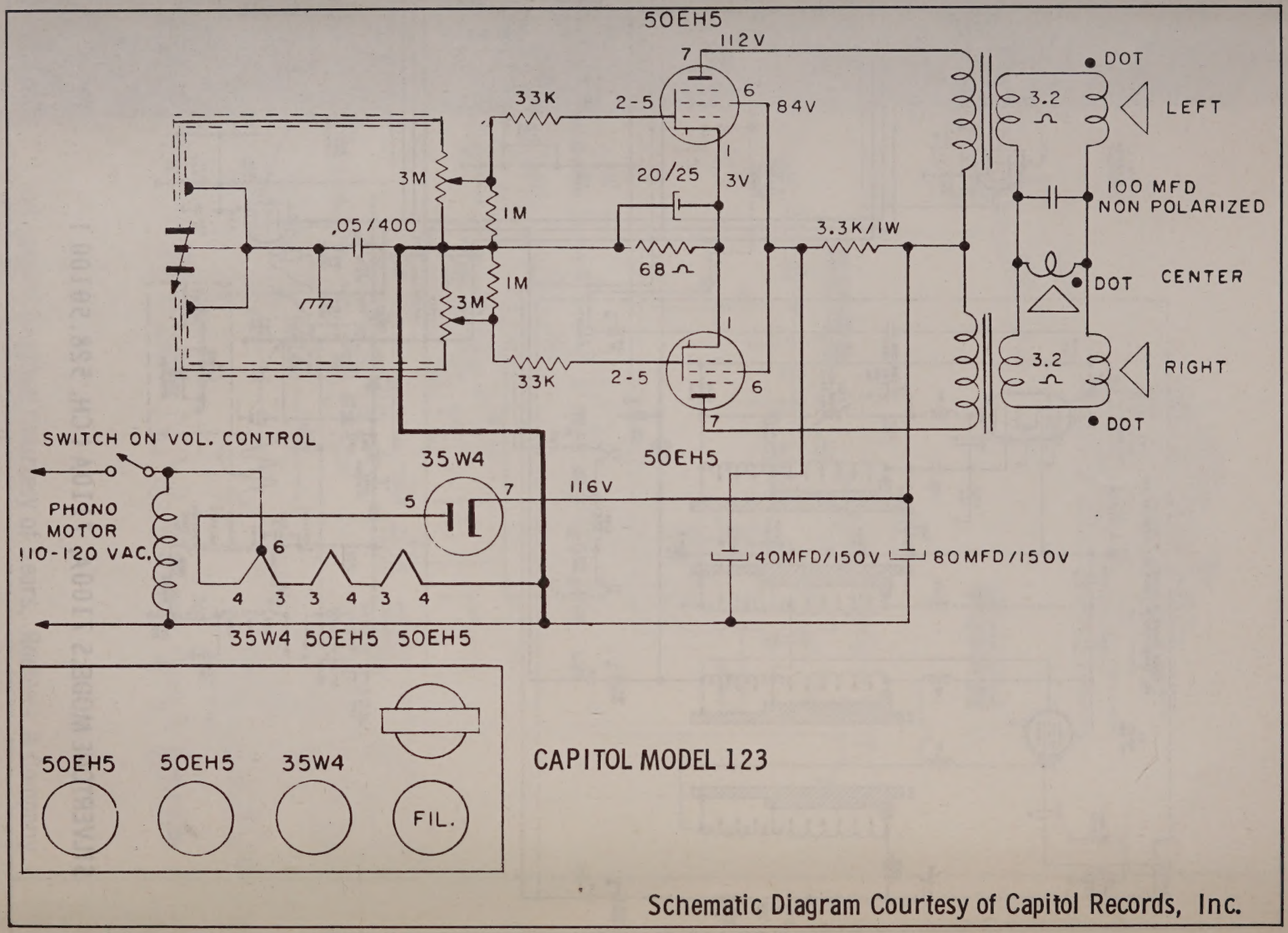
Silvertone Models
7100A, 7110A
(CH. 528.50100)



SILVERTONE MODELS 7100A, 7110A (CH. 528.50100)

Schematic Diagram Courtesy of Sears, Roebuck & Company



Schematic Diagram Courtesy of Capitol Records, Inc.

PHOTOFACT® Folder

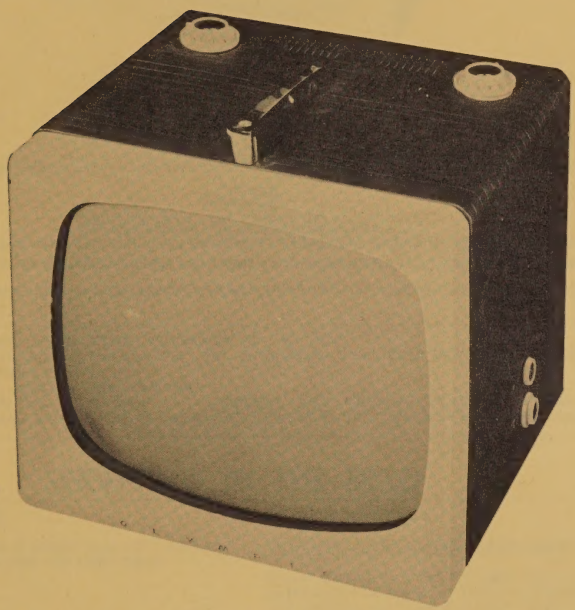
OLYMPIC MODELS 17TU95, 17TU95/UHF (Ch. KU, KUU)

OLYMPIC MODELS 17TU95,
17TU95/UHF (Ch. KU, KUU)

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

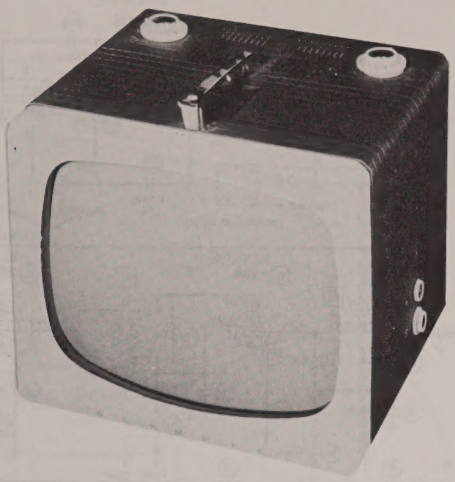


MODEL 17TU95

OLYMPIC MODELS 17TU95,
17TU95/UHF (Ch. KU, KUU)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America



MODEL 17TU95

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

Care should be exercised when connecting test equipment or physically contacting chassis. Isolation devices employed by manufacturer should be checked and properly connected before returning receiver to owner.

TRADE NAME	Olympic Models 17TU95, 17TU95/UHF (Ch. KU, KUU)
MANUFACTURER	Olympic Radio & Television Inc., Div. of the Siegler Corp., 34-01 38th Ave., Long Island City 1, N. Y.
TYPE SET	Television Receiver
TUBES	VHF - Thirteen, UHF - Fourteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING VHF - 125 Watts, 1.2 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

Remove 2 screws on bottom of cabinet front. Pull out from bottom and remove cabinet front with safety glass.

FUSE DEVICE

A 10Ω fusible resistor is used for low voltage power supply protection. (For location, see "Tube Placement Chart".)

TUNER OSCILLATOR ADJUSTMENT

To touch up the VHF Oscillator, remove Channel Selector, Fine Tuning knob, and knob guide cup.

AGC

No provision is made to vary the AGC on this receiver.

FOCUS

The focus may be varied by the position of a strap on the base of the picture tube.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horizontal Frequency Slug (B1). (For location, see "Tube Placement Chart".)

HORIZONTAL DRIVE

The horizontal drive may be varied by a Horizontal Drive Trimmer. (For location, see "Tube Placement Chart".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke on the neck of the picture tube.

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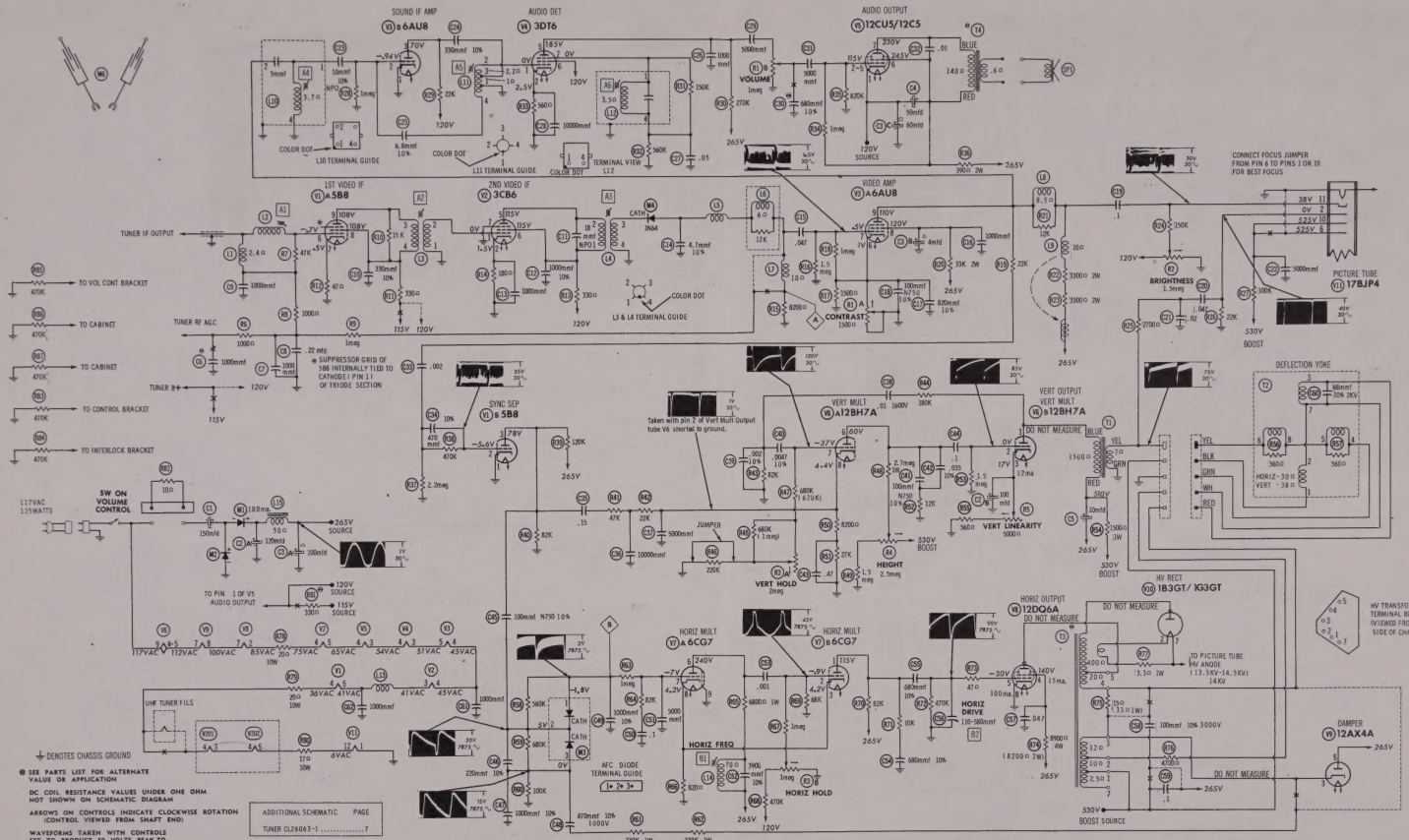
OLYMPIC MODELS 17TU95, 17TU95/UHF (Ch. KU, KUU)

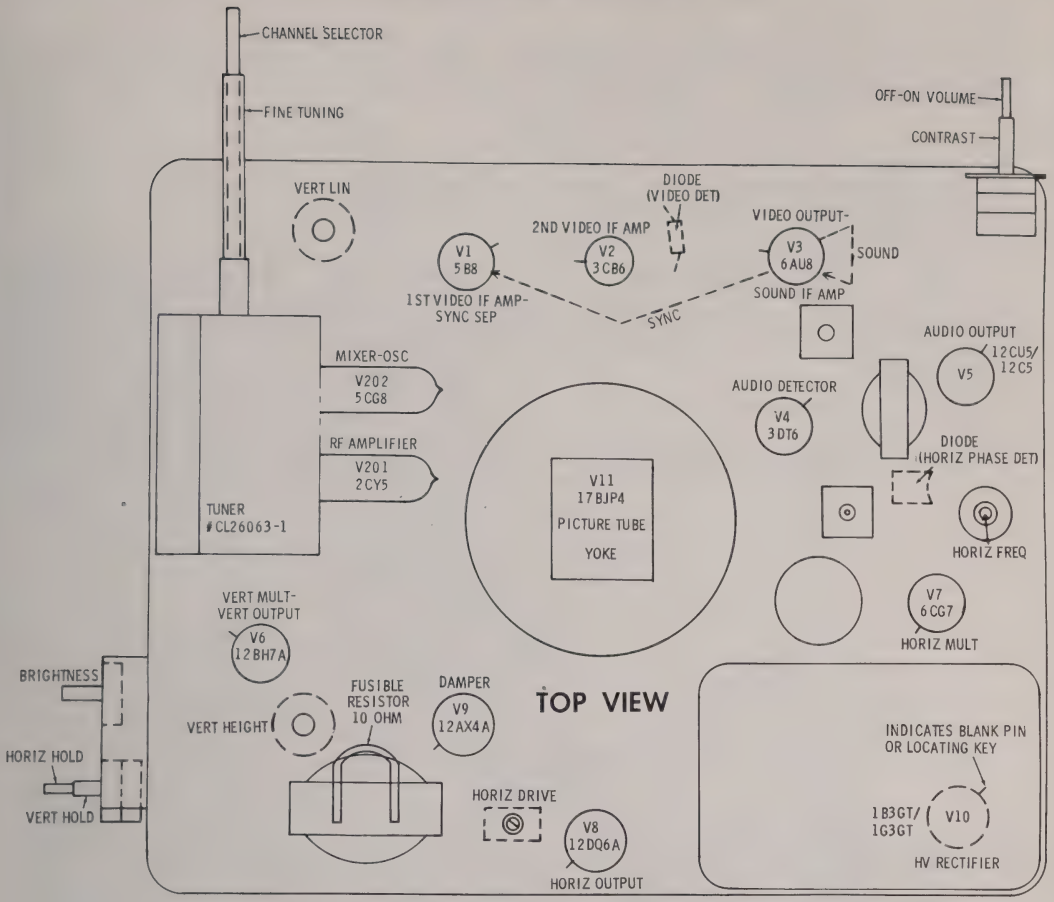
OLYMPIC MODELS 17TU95, 17TU95/UHF (Ch. KU, KUU)

SET 550 FOLDER 1


SOUND IF AMP
V1 6AU8
AUDIO DET
V4 3DT6
AUDIO OUTPUT
V5 12CU5/12C5
VOLUME
1meg
1ST VIDEO IF
V1 A 5B8
2ND VIDEO IF
V2 3CB6
VIDEO AMP
V3 A 6AU8
CONTRAST
1500Ω
BRIGHTNESS
1.5meg
CONNECT FOCUS JUMPER FROM PIN 6 TO PINS 1 OR 10 FOR BEST FOCUS
PICTURE TUBE
V11 17BJP4
BOOST
DEFLECTION YOKE
TUNER IF OUTPUT
TUNER RF AGC
TUNER B+
TO VOL CONT BRACKET
TO CABINET
TO CABINET
TO CONTROL BRACKET
TO INTERLOCK BRACKET
SUPPRESSOR GRID OF 5B8 INTERNALLY TIED TO CATHODE (PIN 1) OF TRIODE SECTION
SYNC SEP
V1 B 5B8
Taken with pin 2 of Vert Mult Output tube V6 shorted to ground.
VERT MULT
V6 A 12BH7A
VERT OUTPUT VERT MULT
V6 B 12BH7A
DO NOT MEASURE
VERT LINEARITY
5000Ω
HEIGHT
2.5meg
VERT HOLD
2meg
HORIZ - 38Ω
VERT - 38Ω
SW ON VOLUME CONTROL
117VAC 125WATTS
TO PIN 1 OF V5 AUDIO OUTPUT
117VAC 112VAC 100VAC 85VAC 75VAC 65VAC 54VAC 51VAC 45VAC
UHF TUNER FILS
36VAC 41VAC 41VAC 45VAC
HORIZ MULT
V7 A 6CG7
HORIZ MULT
V7 B 6CG7
HORIZ FREQ
HORIZ HOLD
AFC DIODE TERMINAL GUIDE
HORIZ OUTPUT
V8 12DQ6A
DO NOT MEASURE
HORIZ DRIVE
HV RECT
V10 1B3GT/ 1G3GT
HV TRANSFORMER TERMINAL BOARD (VIEWED FROM WIRING SIDE OF CHASSIS)
TO PICTURE TUBE HV ANODE (13.5KV-14.5KV) 14KV
DAMPER
V9 12AX4A
DO NOT MEASURE
BOOST SOURCE
DENOTES CHASSIS GROUND
COLOR DOT
L10 TERMINAL GUIDE
L11 TERMINAL GUIDE
TERMINAL VIEW L12
L3 & L4 TERMINAL GUIDE
AFC DIODE TERMINAL GUIDE
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.
ADDITIONAL SCHEMATIC PAGE
TUNER CL26063-1 7
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line Voltage maintained at 117 volts for voltage readings
5. All controls set for normal operation; no signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1961
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

OLYMPIC MODELS 17TU95, 17TU95/UHF (Ch. KU, KUU)

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

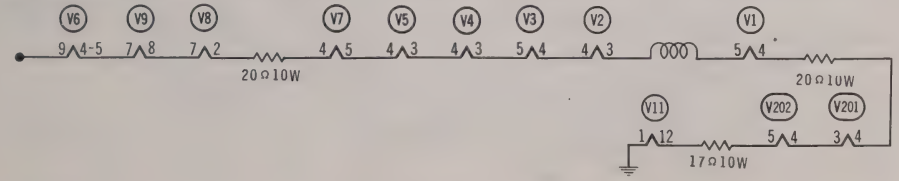
POWER SUPPLY FAILURE
No raster, no sound Resistor (Fusible 10Ω), Rectifiers M1, M2

SWEEP FAILURE
No raster, has sound V7, V8, V9, V10, V11
No vertical deflection V6
Poor vert. linearity or foldover V6
Poor horiz. linearity or foldover V7, V8, V9
Narrow picture V7, V8, V9, M1, M2
Vert. off freq. V6
Horiz. off freq. Diode (Horiz. Phase Det.), V7

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, Diode (Video Det.), V3, V5
No pic, no sound, has snow V201, V202
No pic, has sound, has raster V3, V11
Has pic, no sound V3, V4, V5

SYNC FAILURE
No vert. sync V1
No horiz. sync V1
No vert. or horiz. sync V1

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A1 thru A4 .... GENERAL CEMENT #8282, 8606, 8606L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A5, A6 ..... GENERAL CEMENT #8721, 8722
WALSCO #2519

VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide a usable pattern on scope.
Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Place a thin insulated metal strip between the Mixer-Osc. tube and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	44MC (10MC Swp.)	42.25MC 45.75MC	Any non-interfering channel	Vert. Amp. thru 100K to point (A). Low side to chassis.	A1, A2, A3 and Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.

SOUND IF ALIGNMENT

Tune in a TV station and adjust controls for normal operation. Connect an Output Meter across speaker voice coil. Adjust A4, A5 and A6 for maximum deflection, then maximum undistorted sound.

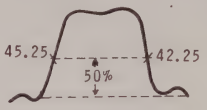
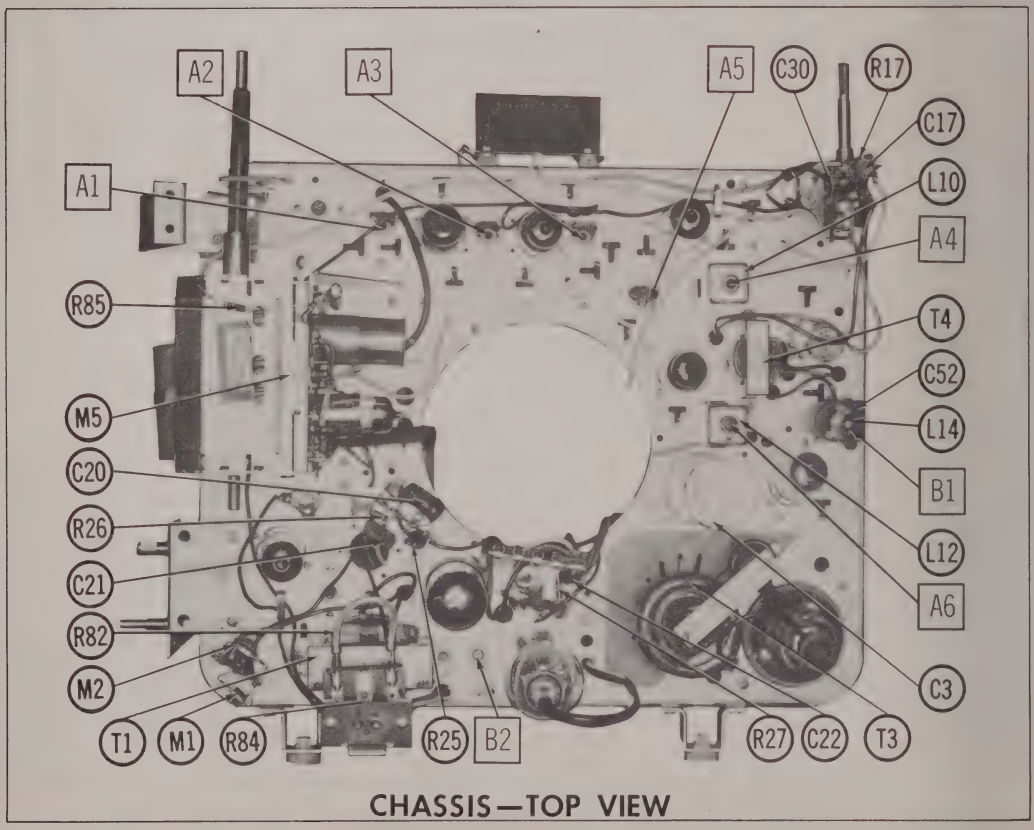
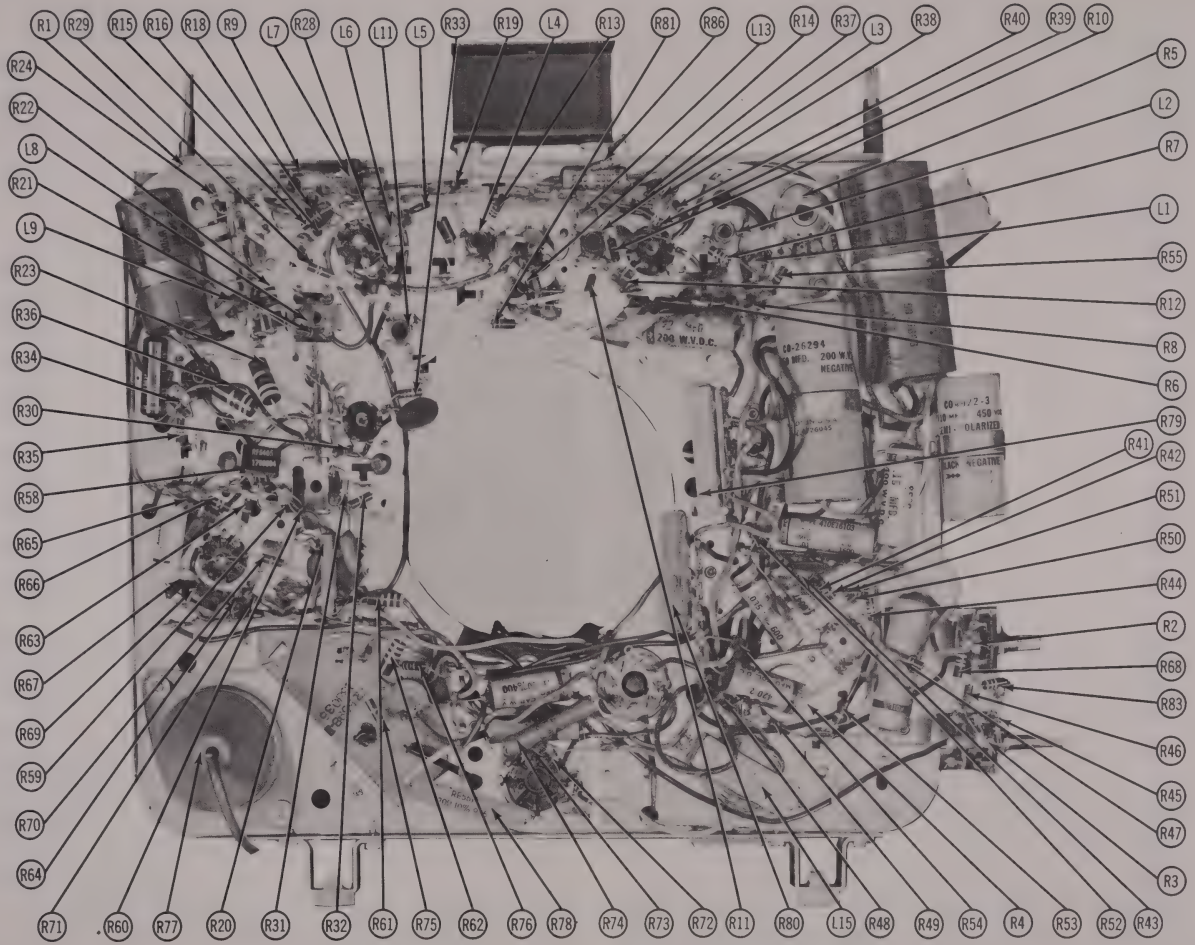


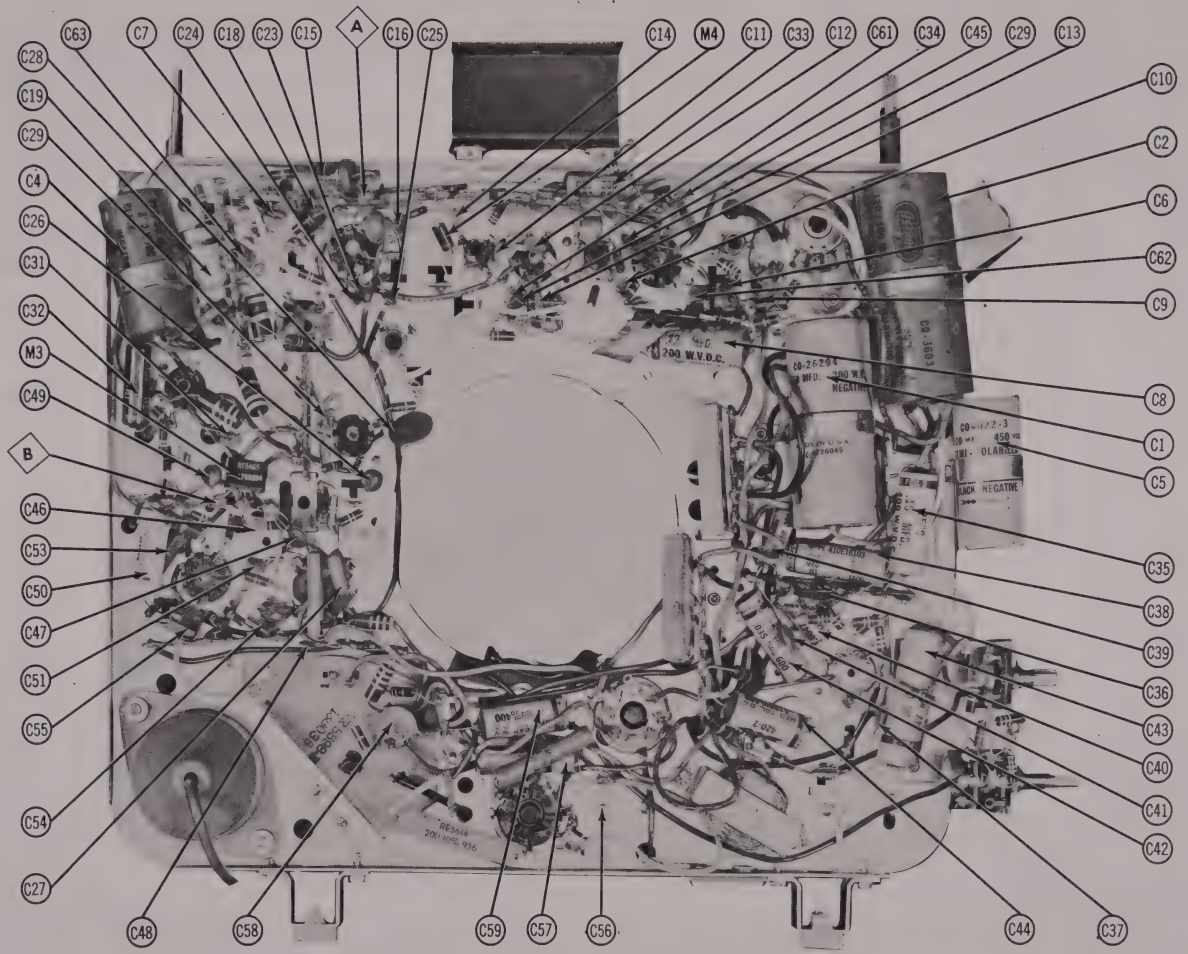
FIG. 1



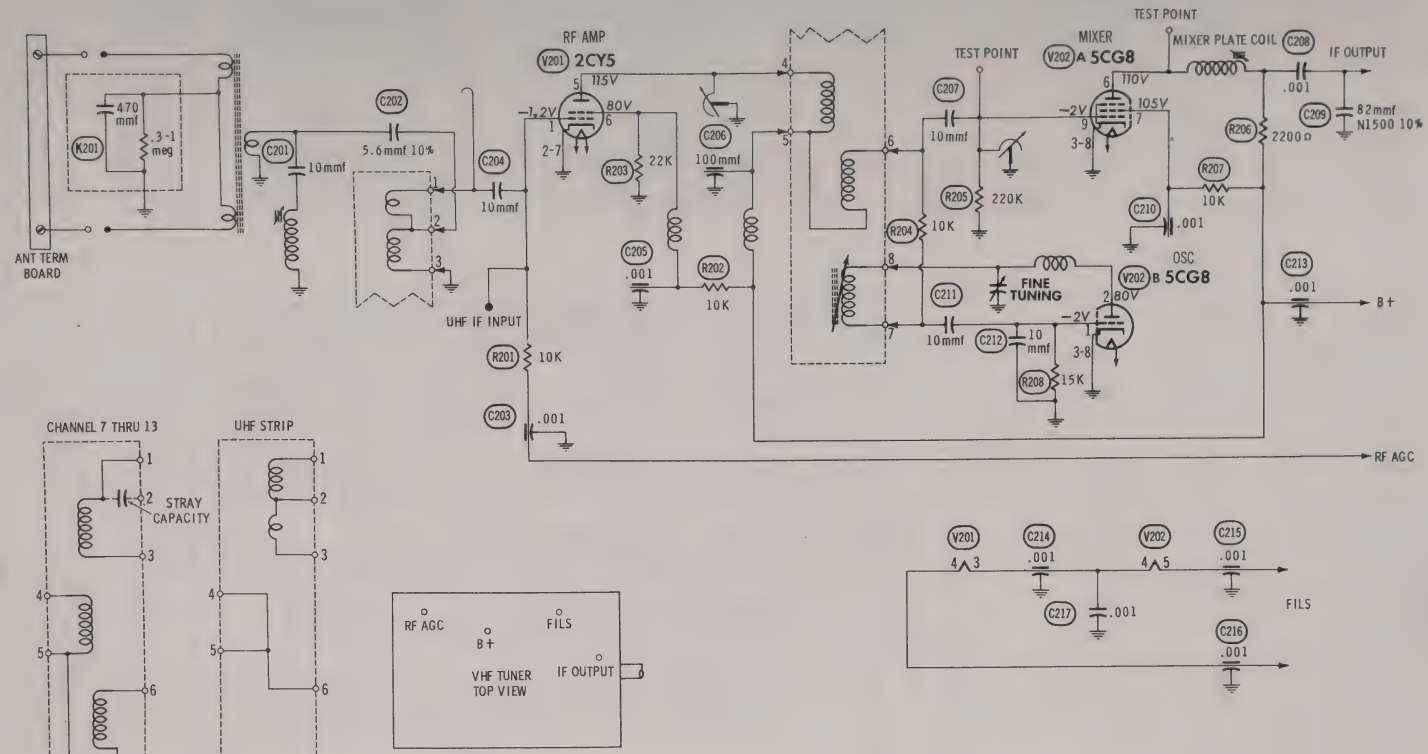
CHASSIS—TOP VIEW



CHASSIS BOTTOM VIEW - RESISTOR, INDUCTOR IDENT.



CHASSIS BOTTOM VIEW - ALIGN., CAPACITOR, MISC. IDENT.



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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TUNER CL26063-1

OLYMPIC MODELS 17TU95, 17TU95/UHF (Ch. KU, KUU)

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	GENERAL ELECTRIC *	RAYTHEON *	SYLVANIA *	ITEM No.	USE	TYPE
V1	1st Video IF Amp. - Sync Sep.	5B8		V5	Audio Output	12CU5/12C5
V2	2nd Video IF Amp.	3CB6		V6	Vert. Mult. - Vert. Output	12BH7A
V3	Video Output -			V7	Horiz. Mult.	6CG7
V4	Sound IF Amp.	6AU8		V8	Horiz. Output	12DQ6A
V4	Audio Detector	3DT6		V9	Damper	12AX4A
				V10	HV Rectifier	1B3GT/1G3GT

PICTURE TUBE

ITEM No.	REPLACEMENT DATA					NOTES
	OLYMPIC PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V11	17BJP4	17BJP4/BUP4 ①	17BJP4 ①		17BJP4 ②	① Aluminized ② Silver Screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP	VOLT	OLYMPIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	150	300	CO-28294-1	PRI-180		TC992	TD-150-300	TVA8-1447 *	
C2A	130	300	CO-8393	PR3-300	BBRD0286	WD438	CDB-D-3014	TVA8-2563 *	
B	100	50							
C3A	±100	300	CO-8801	AFH4-03-45		FP336.85		TVL8-3577.5 *	
B	±4	300							
C	±60	200							
C4	50	350	CO-3063-3	PHR546	BR5035	TC99	TD-50-450	TVA-1713	
C5	10	450(R)	CO-4023-3	PR1-300		TCN811			

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	.001		Note 1	BPD-001	DD-102	BYA101H	CCD-102	B-150	5HK-D10
C7	.001			BPD-001	DD-103	BYA101H	CCD-102	B-150	5HK-D10
C8	.22	200V		P288N-22		DP354P33	2DP-4-234	GEM-2022	2TM-P22
C9	.001			BPD-001	DD-103	BYA101H	CCD-102	B-150	5HK-D10
C10	330	10%		DI-330	DD-331	L10T33	CCD-331	GP333	10TC-T33
C11	18	NPO		NPO-DI 20	TCS-18	CUQ18C	CCH0-180	CNO-618	10TC-Q18
C12	.001	10%		DI-1000	DD-102	SR3I5	CCD-102	GP310	10TS-D10
C13	.001			BPD-001	DD-103	BYA101H	CCD-103	B-260	5HK-D10
C14	4.7	10%		NPO-SI 47	TCZ-4R7	CUV47C	CCH0-4R7	CNO-547	10TCC-Y47
C15	.047	400V		P488N-047	DD-503	CUV484T	4DP-3-473	GEM-4147	4TM-S47
C16	.001			BPD-001	DD-103	BYA101H	CCD-103	B-260	5HK-D10
C17	330	10%		DI-330	DD-330	SR5T33	CCD-331	GP343	10TS-T33
C18	100	N750	10%	NT0-DI 100	DD-100	CUT1U	CCT0-101	CNT-310	10TCU-T10
C19	.1	400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C20	.047	400V		P488N-047	DD-503	CUB484T	4DP-3-473	GEM-4147	4TM-S47
C21	.02	400V		P488N-02	DD-303	CUB482	4DP-3-203	GEM-4132	4TM-S20
C22	.005			BPD-005	DD-502	BYA101H	CCD-502	B-260	5HK-D50
C23	10	NPO	10%	NPO-DI 10	DTE-10	CUQ1C	CCH0-100	CNO-410	10TC-Q10
C24	330		10%	DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C25	6.8		10%	P488N-6R8	TCV-6R8	CUV68C	CCH0-6R8	CNO-568	10TCC-V68
C26	.001			BPD-001	DD-103	BYA101H	CCD-103	B-260	5HK-D10
C27	.05	50V		P288N-05	DD-503	H-0505	1DP-3-503	GEM-415	2TM-S50
C28	.01			BPD-01	DD-103	BYA103H	CCD-103	B-150	5HK-S10
C29	.005			BPD-005	DD-502	BYA101D	CCD-502	B-260	5HK-D50
C30	680		10% Note 1	DI-680	DD-681	SR3T68	CCD-681	GP368	10TS-T68
C31	.005			BPD-005	DD-502	BYA101D	CCD-502	B-260	5HK-D50
C32	.01	600V		P688N-01	DE-103	CUD6S	6DP-3-103	GEM-611	6TM-S10
C33	6000	600V		P688N-003	DE-302	CUD6D3	6DP-1-302	GEM-622	6TM-D20
C34	470			DI-470	DD-471	BYA10747	CCD-471	B-347	10TS-T47
C35	.15	400V		P488N-15		CUB4P15	4DP-3-154	GEM-4015	4TM-P15
C36	.01			BPD-01	DD-103	BYA10S	CCD-103	B-150	5HK-S10
C37	.005		10%	BPD-005	DD-502	BYA101S	CCD-502	B-260	5HK-D50
C38	.01	1600V		P1604CM-01	DD16-103	CUB16S	1BDP-3-103	GEM-1611	MB-S1
C39	.002	600V	10%	V84CM03-105		PME12	6DP-1-202	GEM-622	6TM-D20
C40	.0047	600V	10%	V84CM47-105		P68D47	6DP-1-472	GEM-6247	6TM-D47
C41	100	N750	10%	NT0-DI 100	DTN-100	CUT1U	CCT0-101	CNT-310	10TCU-T10
C42	.033	600V	10%	V84CM33-105		P68S33	6DP-3-333		KP6-S33
C43	.47	200V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C44	.1	400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C45	100	N750	10%	NT0-DI 100	DTN-100	CUT1U	CCT0-101	CNT-310	10TCU-T10
C46	220		10%	DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C47	.001		10%	DI-102	DD-102	SR3I5	CCD-102	GP310	10TS-D10
C48	470		10%	DI-471	DD-471		CCD-471	GP347	10TS-T47
C49	.001		10%	DI-102	DD-102	SR3I5	CCD-102	GP310	10TS-D10
C50	.1	200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C51	.005			BPD-005	DD-502	BYA10D5	CCD-502	B-260	5HK-D50
C52	.0039		10%	1484-0039		CM-20D-392K	MCC462.5	MS-239	5TM-D39
C53	.001	600V		P688N-001	DE-102	CUB6D1	6DP-1-102	GEM-621	6TM-D10
C54	680		10%	1469-00068		SR5T68	CM-15B-681K	MCJ249	MS-368
C55	680		10%	1469-00068		SR5T68	CM-19B-681K 500V	MCJ249	MS-368
C56	110-580		#CT3526						
C57	.047	400V		P488N-047	DD-503	CUB484T	4DP-3-473	GEM-4147	4TM-S47
C58	100	3000V	10%	#CO3781				3DY-310	
C59	.1	400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C60	68	2000V	10%	#CO4530		HVA30Q6S	VCM-20-681K	3DY-468	
C61	.001			BPD-001	DD-102	BYA102H	CCD-102	B-250	5HK-D10
C62	.001			BPD-001	DD-102	BYA101H	CCD-102	B-210	5HK-D10
C63	.02			BPD-01	DD-303	BYB562	CCD-203	B-120	5HK-S20

Note 1. Not used in some versions. # Olympic Part Number

CONTROLS

ITEM No	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	OLYMPIC PART No.	CENTRALAB PART No. -	CLAROSTAT PART No.	CTS - IRC PART No.	MALLORY PART No.	
R1A	1500Ω	½	PT5589	F1-7	RTV-650	‡QJ-1389	‡UE37978	Contrast
B	1meg			R3-52				Volume
C	Switch			KH-1				Power Off-On

CONTROLS (cont)

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	OLYMPIC PART No.	CENTRALAB PART No.	CAROSTAT PART No.	CTS - IRC PART No.	
R2A	1.5meg	½	PT5591	B-742	A47-1.5meg-S	QU-139	U155	Brightness
B	Shaft			Not Reg.	536-3	Not Reg.	Not Reg.	
R3A	2meg	½	PT5579	R2-50		‡QJ-955	‡UE37996	Vert. Hold
B	1meg			R2-51				Horiz. Hold
R4	2.5meg	½	PT5008-1	TT-83	B47-2.5meg-S	HLC-2	TA355L	Height
R5A	5000Ω	½	PT3619-2	TT-10	B47-5000-S	BII-114	PTA52L	Vert. Linearity
B	Shaft			Not Reg.	Not Reg.	TM4	Not Reg.	

† "CONCENTRIKIT" Equivalent: K-16 Kit with Base Elements and Shafts: B17-106, P17-106 (Panel); B13-137, R16-137 (Rear); T6-1 (Switch)

‡ "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B11-139, P3-023 (Panel); (Not available as a factory assembled unit). B11-157, R1-103 (Rear)

* "STA-LOC" Equivalent: FB152S, RU18A, OF1250, HS3005, U841.

▲ "STA-LOC" Equivalent: FB8L, RU81, OS82S, HS063.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA				ITEM No.	RATING	REPLACEMENT DATA			
		IRC PART No.	WORKMAN TV PART No.	REMARKS				IRC PART No.	WORKMAN TV PART No.	REMARKS	
R6	1000Ω					R47	680K			(820Ω) *	
R7	47K					R48	2.7meg 1W				
R8	10000					R49	1.5meg				
R9	1meg					R50	8200Ω				
R10	15K					R51	27K				
R11	330Ω					R53	12K				
R13	47Ω					R53	1.5meg				
R13	330Ω					R54	1500Ω 1W				
R14	180Ω					R55	560Ω				
R15	8200Ω					R56	560Ω				
R16	1.5meg					R57	560Ω				
R17	1500Ω					R58	560K				
R18	1meg					R59	680K				
R19	22K					R60	100K				
R20	33K					R61	330K 1W				
R21	12K					R62	330K 1W				
R22	3300Ω 2W					R63	1meg				
R23	3300Ω 2W					R64	82K				
R24	150K					R65	6800Ω 1W				
R25	2700Ω					R66	82K				
R26	22K					R67	1meg				
R27	100K					R68	470K				
R28	1meg					R69	68K				
R29	22K					R70	82K				
R30	270K					R71	10K				
R31	150K					R72	470K				
R32	560K					R73	470				
R33	560Ω					R74	8960Ω 4W	PW5-8900	TW-SQ-8900	(8200Ω 2W)* (33Ω 1W)*	
R34	1meg					R75	15Ω				
R35	82K					R76	4700Ω				
R36	39Ω 5W					R77	3.3Ω 1W				
R37	2.2meg					R78	30Ω 10W	PW10-20	10W-SQ-20		
R38	470K					R79	30Ω 10W	PW10-20	10W-SQ-20		
R39	120K					R80	17Ω 10W	PW10-17	10W-SQ-17		
R40	82K					R81	330Ω			Note 1 #RE27113	
R41	47K					R82	10Ω †				
R42	22K			(1meg) *		R83	470K				
R43	22K					R84	470K				
R44	180K					R85	470K				
R45	680K					R86	470K				
R46	220K					R87	470K				

* Value used in some versions.
Note 1. May not be used in some versions.

† Fusible Type
# Olympic Part Number

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		OLYMPIC PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Peaking (36uh)	CL1535	TV-180	6178	RTC-8593	T301	
L2	1st Video IF	CL4713-1	TV-131	6236	RTC-8528	T218	
L3	2nd Video IF	CL4611	TV-130	6235	RTC-8551	T227	
L4	3rd Video IF	CL28083	TV-130	6219	RTC-8551	T227	
L5	RF Choke (1.8uh)	CS4126	BC-562	6804	RTC-8518	T358	
L6	Peaking (180uh)	CL2358 ①	TV-184 ▲	6180 ▲	RTC-8597 ▲	T310 ▲	① Wound on 12K Resistor. ▲ Parallel with 12K Resistor.
L7	Peaking (300uh)	CL3614	TV-203	6174	RTC-8592	T324	
L8	Peaking (390uh)	CL3403	TV-199	6185	RTC-8597	T308	
L9	Peaking (500uh)	CL3614	TV-203	6174	RTC-8592	T324	
L10	1st Sound IF	CL35518	TV-154 †	6170-A †	RTC-8604 †	T347 †	† Connect 5uuf cap externally.
L11	2nd Sound IF	CL4021					
L12	Quadrature	CL3603-1	TV-134	6181	RTC-8606	T348	
L13	Fil. Choke (1.5uh)	CL3427	BC-562	6804	RTC-8518	T358	

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							NOTES
		OLYMPIC PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	Workman TV PART No.	
L14	Horiz. Stabilizer	CL3464-1	TV-163	6210	RTC-8622	HS-5	WLC-25	T103	

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE @ CURRENT 1000 ~(y)	OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
L15	.180A	50Ω	.7H	CS6047		C-2337 ①		C-36X	① Drill new mounting hole(s).

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.		
T1	Vert. Output	TR-3689-1	A-2618 ①	YO-111	26S78 ①	A-13GX		① Use 18 to 1 turns ratio
T2	Yoke (Horiz. 18MH) (90°) (Vert. 40MH)	CL-3600-6	MDT-02 ② ③	DY-16A ② ③	Y-16 ② ③	T-4J-3		② Connect same as original.
	Rear Cover and Centering Device					YC-112		③ Use original horiz. damping network if necessary; requires new rear cover and centering device.
	Yoke Clamp							
T3	Horiz. Output	TR-5598-B		HO-316 *	FLY-146 *	D-20 *		
	Aut. Horiz. Output	TR-5598		HO-318				

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

ORIGINAL TERMINAL CONNECTIONS	Merit Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
5		5	2	
4		4	4	
3		3	4	
2		2	3	
1		1	1	
? ④		? ④		

④ No connection to terminal #7.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	OLYMPIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T4	2200Ω	3-4Ω	TR-5620A ①	A-3025	A-3333	24S53	S-12X	① Alternate Part #TR-5620

SPEAKER

ITEM No.	TYPE				REPLACEMENT DATA				NOTES
	SIZE	FIELD	V. C. IMP.		OLYMPIC PART No.	QUAM PART No.			
SP1	4"	PM	3-4Ω		SE4342	4A0T			

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	OLYMPIC PART No.	RCA PART No.	SARKES TARZIAN PART No.		
M1	.180A	RF26335-1	1N1763	40H		
M2	.180A	RF26335-1	1N1763	40H		

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		OLYMPIC PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	
M3	1N64 †	RF5465 * 1N64 †	SGC1 *	1N64	* Dual Selenium Diode, Common Cathode Type. † Video Detector
M4					

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M5	Tuner	CL28063-1	VHF with UHF Provisions, STANDARD COIL REPLACEMENT #GS8-422B-A
M6	Tuner Antenna	CL28404	UHF JFD REPLACEMENT TYPE #TA442

CABINETS & CABINET PARTS

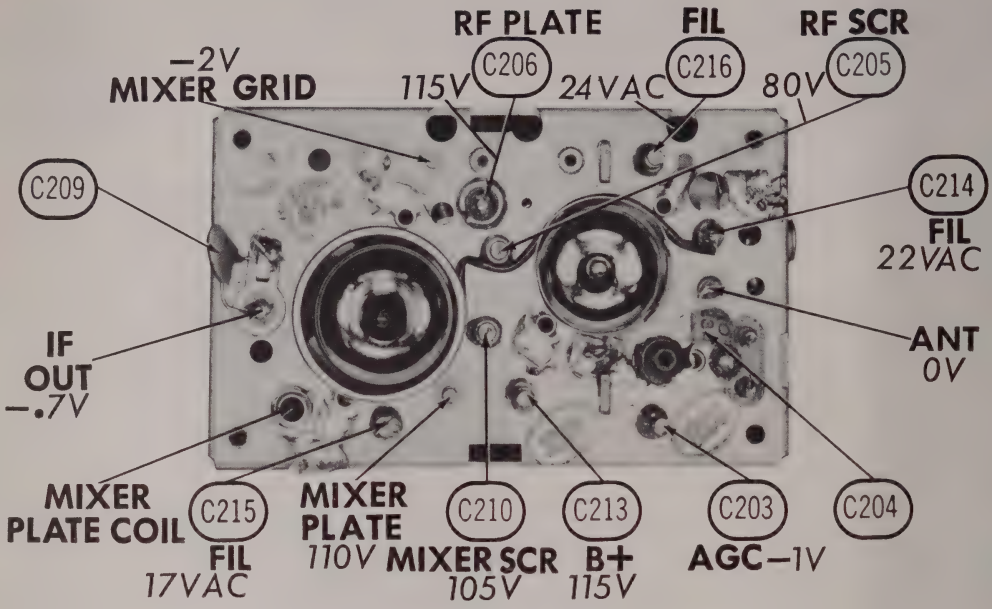
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

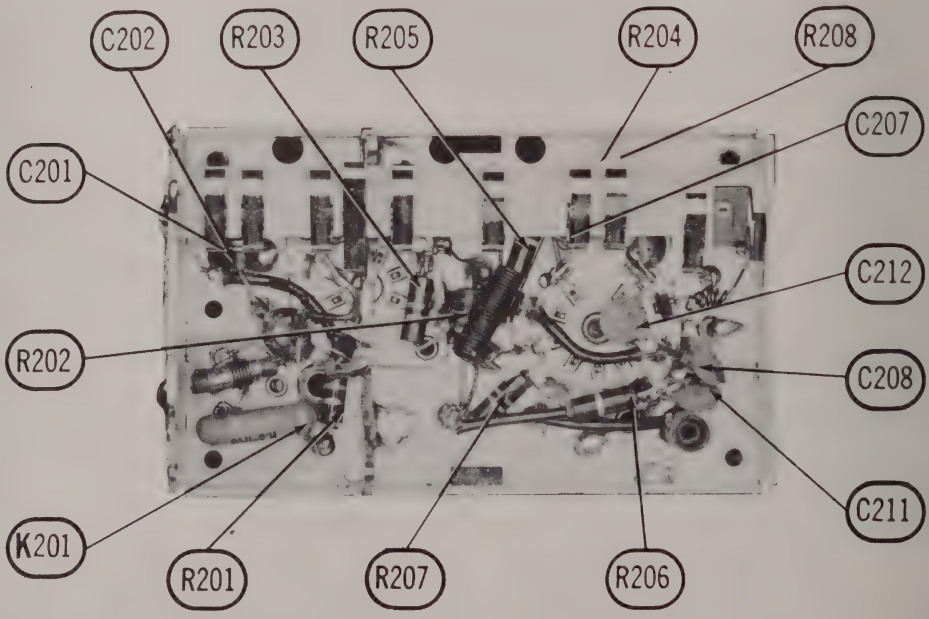
High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8895 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8534 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8235
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8486 (Round) - 8 Conductor

OLYMPIC MODELS 17TU95, 17TU95/UHF (Ch. KU, KUU)

FOLDER 1



TUNER CL26063-1 - TOP VIEW



TUNER CL26063-1 - BOTTOM VIEW

TUNER PARTS LIST AND DESCRIPTIONS

CL26063-1

TUBES

• GENERAL ELECTRIC •			• RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	2CY5	V202	Mixer - Osc.	5CG8

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	10		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C202	5.6 10%							10TCC-V56
C203	.001		EF-001	MFT-1000		CCF-102	CT280A	
C204	10		DI-10	DD-100		CCD-100	GP410	10TS-Q10
C205	.001		EF-001	MFT-1000		CCF-102	CT280A	
C206	100		EF-0001	MFT-100				
C207	10		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C208	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C209	82 N1500 10%					*		
C210	.001		EF-001	MFT-1000		CCF-102	CT280A	
C211	10		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C212	10		DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C213	.001		EF-001	MFT-1000		CCF-102	CT280A	
C214	.001		EF-001	MFT-1000		CCF-102	CT280A	
C215	.001		EF-001	MFT-1000		CCF-102	CT280A	
C216	.001		EF-001	MFT-1000		CCF-102	CT280A	
C217	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10

* Not normally in distributor's stock. Available thru distributor on order to manufacuter.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R201	10K				R205	220K			
R202	10K				R206	2200Ω			
R203	22K				R207	10K			
R204	10K				R208	15K			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	OLYMPIC PART No.	REPLACEMENT DATA
K201	Antenna Filter	470mmf, .3-1meg		Centralab RC-47I Sprague AC1-1

TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

VHF OSCILLATOR ALIGNMENT

The individual channel adjustment screws are accessible one at a time thru a hole in the front of the tuner, as the Channel Selector is rotated. Set the Fine Tuning to the center of its range and switch to the channel to be adjusted. Adjust for best picture and sound.

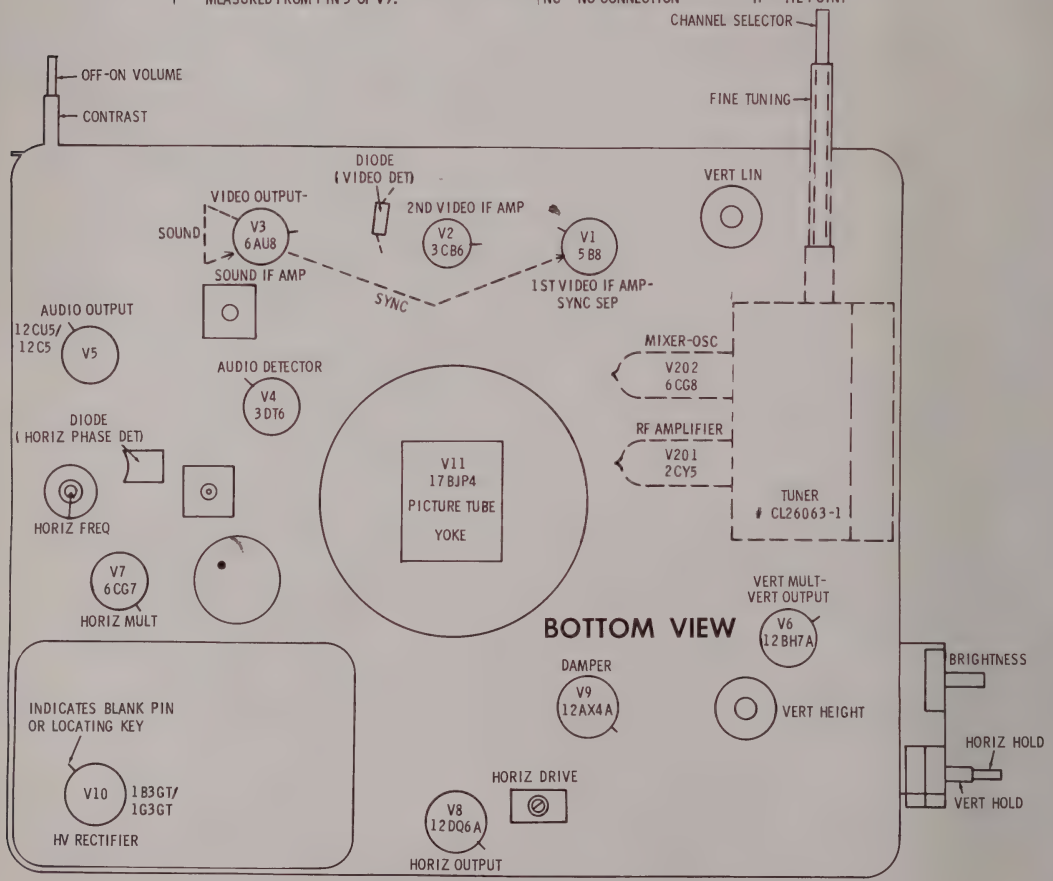
VHF RF AND MIXER ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.

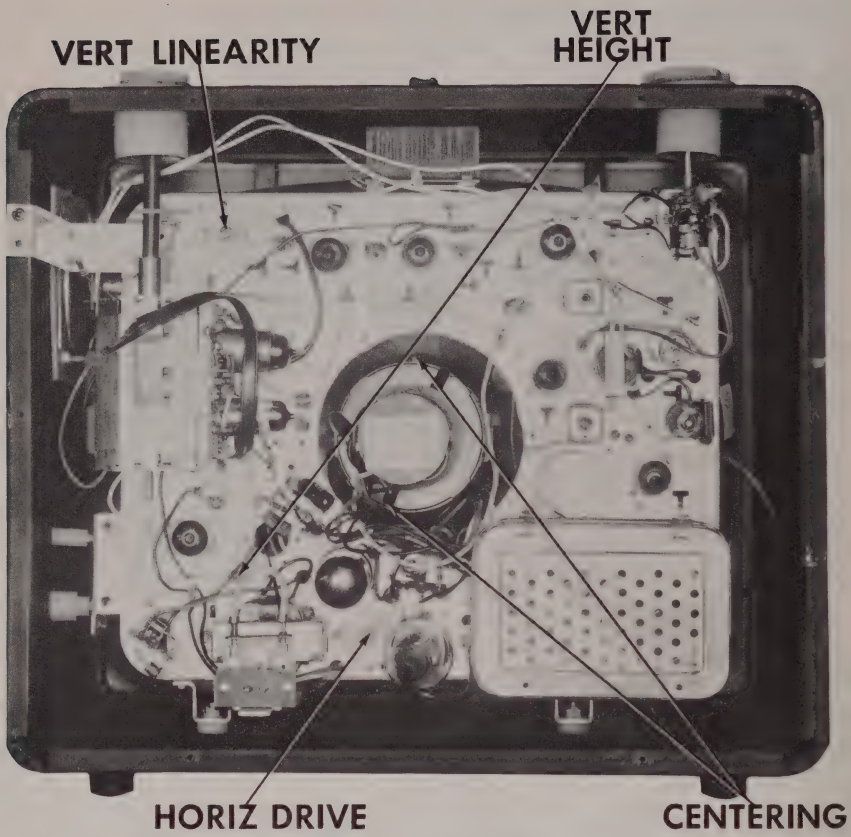
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	5B8	0Ω	2.7meg	†70K	40Ω	42Ω	1meg	47Ω	▪660Ω	▪660Ω
V2	3CB6	.1Ω	180Ω	41Ω	42Ω	▪330Ω	▪330Ω	0Ω		
V3	6AU8	0Ω	1meg	▪22K	42Ω	44Ω	●600Ω	650K	†33K	†6600Ω
V4	3DT6	3Ω	560Ω	44Ω	45Ω	†270K	▪0Ω	560K		
V5	12CU5/ 12C5	¶30K	NC	45Ω	48Ω	460K	†390Ω	†580Ω		
V6	12BH7A	¶3000Ω	1.5meg	●1400Ω	75Ω	75Ω	●†4meg	●1meg	35K	78Ω
V7	6CG7	†82K	68K	820Ω	50Ω	48Ω	†6800Ω	2meg	820Ω	0Ω
V8	12DQ6A	TP	70Ω	NC	†8900Ω	470K	TP	73Ω	0Ω	TOP CAP †34Ω
V9	12AX4A	NC	NC	¶	NC	†50Ω	NC	75Ω	73Ω	
V10	1B3GT/ 1G3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †440Ω
V11	17BJP4	0Ω	22K	Pin 6 †100K	Pin 10 †100K	Pin 11 ●200K	Pin 12 1Ω			
V201	2CY5	1meg	0Ω	20Ω	21Ω	▪330Ω	▪10K	0Ω		
V202	5CG8	15K	▪10K	0Ω	19Ω	18Ω	▪2500Ω	▪10K	0Ω	220K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
▪ THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM OUTPUT OF M2. ▪ MEASURED FROM PIN 1 OF V5.
† MEASURED FROM PIN 3 OF V9. NC NO CONNECTION TP TIE POINT



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and allow it to warm up for 2 minutes.

Tune in a TV station, preferably with a test pattern.

Connect a clip lead from point Ⓑ to chassis. Connect another clip lead across the Horizontal Stabilizer Coil (L14).

Adjust the Horizontal Hold until the picture synchronizes horizontally. (It may float back and forth.)

Remove the clip lead from L14. Adjust the Horizontal Frequency Slug (B1) until the picture is again in frequency. Remove clip lead from point Ⓑ and chassis. Turn Horizontal Drive Trimmer (B2) counterclockwise until a vertical white line (drive line) appears near the center of the screen, then turn clockwise until line just diaappears. If drive line cannot be obtained, adjust B2 for proper width.

If B2 is adjusted, recheck adjustment of B1 and Horizontal Hold.

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 screws in rear cover, and remove cover.
2. Remove 4 push-on type knobs on top of cabinet.
3. Remove 3 push-on type knobs on side of cabinet.
4. Remove 2 chassis bolts and rear screw in handle.
5. Remove speaker leads, picture tube socket, and yoke plug.
6. Remove chassis.

PICTURE TUBE REMOVAL

Remove chassis for access to picture tube mounting assembly.

PHOTOFACT® Folder with CIRCUITRACE®

RCA VICTOR CHASSIS CTC11A, B, C, D, E, F, H, J, CRK3F, CTP7B

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

RCA VICTOR CHASSIS CTC11A, B, C, D, E, F, H, J, CRK3F, CTP7B

RCA VICTOR CHASSIS CTC11A, B, C, D, E, F, H, J, CRK3F, CTP7B

MODEL 211CB412

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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PHOTOFACT® Folder with CIRCUITRACE®

RCA VICTOR CHASSIS CTC11A, B, C, D, E, F, H, J, CRK3F, CTP7B

RCA VICTOR CHASSIS CTC11A, B, C, D, E, F, H, J, CRK3F, CTP7B

MODEL 211CB412

TRADE NAME	RCA VICTOR MODELS	TV Chassis	VHF Tuner	UHF Tuner	REMOTE CONTROL Transmitter	REMOTE CONTROL Receiver
	211CB412	CTC11A	KRK98D			
	211CB412U	CTC11B	KRK99D	KRK66AA		
	211CD425, 211CD426, 211CD427, 211CD435, 211CD436, 211CD437, 211CD445, 211CD446, 211CD447, 211CD456, 211CD464, 211CD475, 211CD476, 211CD477	CTC11C	KRK98J			
	211CD425U, 211CD426U, 211CD427U, 211CD435U, 211CD436U, 211CD437U, 211CD445U, 211CD446U, 211CD447U, 211CD456U, 211CD464U, 211CD475U, 211CD476U, 211CD477U	CTC11D	KRK99J	KRK66AA		
	211CDR425, 211CDR426, 211CDR427, 211CDR446, 211CDR456, 211CDR464	CTC11E	KRK98C		CRK3F	CTP7B
	211CDR425U, 211CDR426U, 211CDR427U, 211CDR446U, 211CDR456U	CTC11F	KRK99C	KRK66AB	CRK3F	CTP7B
	211CB392	CTC11H	KRK98K			
	211CB392U	CTC11J	KRK99K	KRK66AA		

MANUFACTURER	Radio Corporation of America, RCA Victor Home Instruments Division, Indianapolis 1, Indiana
TYPE SET	Color Television Receiver
TUBES	TV: (UHF) Twenty-Seven (VHF) Twenty-Six Remote Control Receiver: Six
TRANSISTOR	Remote Control Transmitter: One
POWER SUPPLY	110-120 Volts AC, 60 Cycle (Transmitter 4.2V Battery)
RATING	TV: VHF - 290 Watts, 2.95 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

MISCELLANEOUS ADJUSTMENTS - PAGE 16
BLOCK DIAGRAM - PAGE 33

SCHEMATICS	PAGE
TV	2
ALTERNATE PICTURE TUBE CATH CONNECTIONS	3
VHF TUNER	21
VHF TUNER (WITH UHF PROVISIONS)	28
UHF TUNER	23
REMOTE CONTROL RECEIVER & TRANSMITTER	24, 25

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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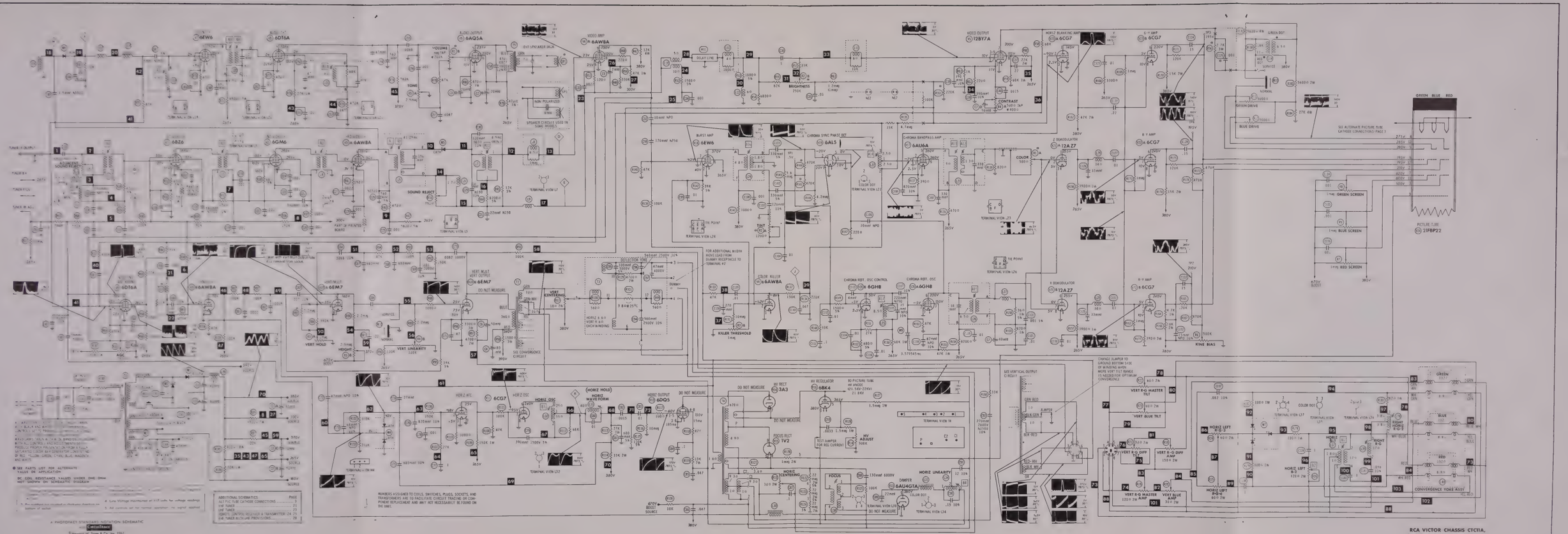
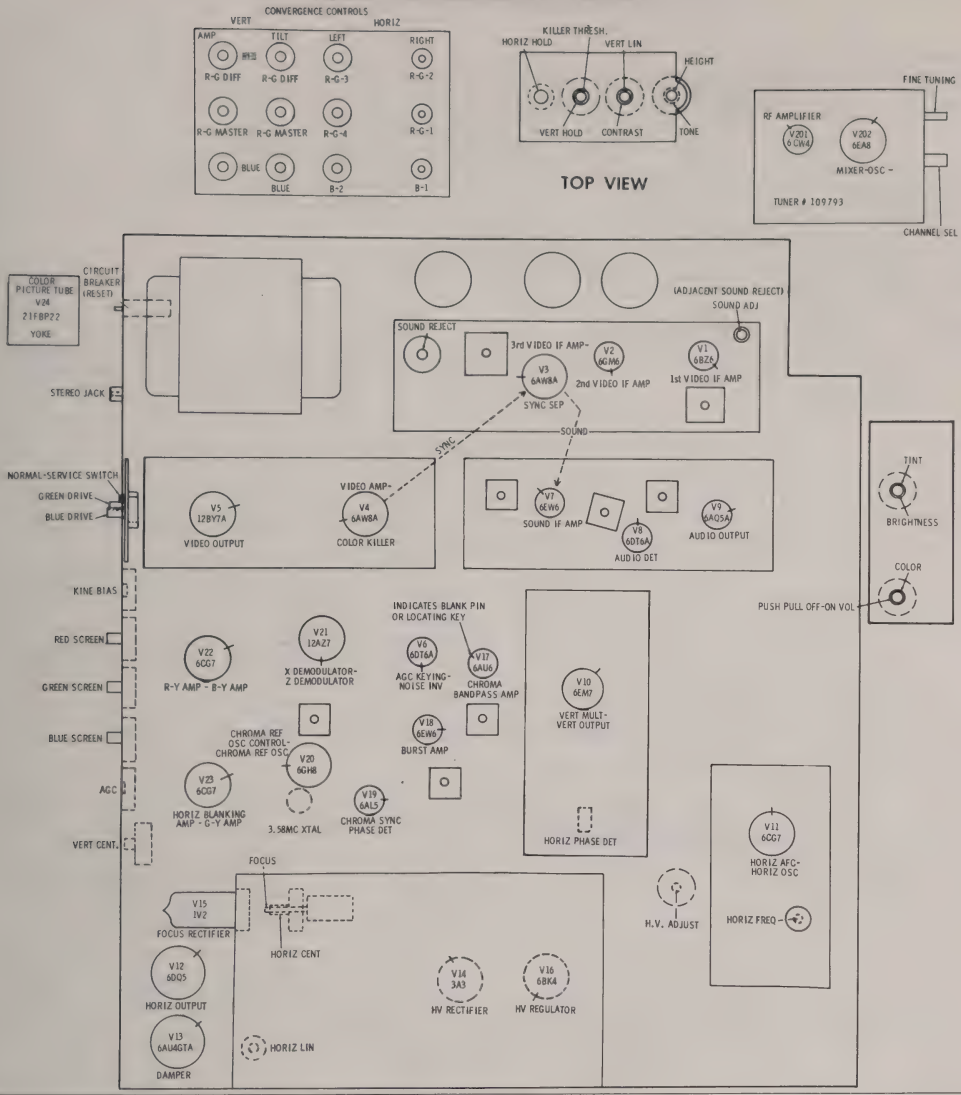
SET 550 FOLDER 2


RCA VICTOR CHASSIS CTC11A, B, C, D, E, F, H, J, CRK3F, CTP7B

TUBE PLACEMENT CHART



COLOR PICTURE TUBE CATHODES ARE USUALLY CONNECTED AS IN FIG. A. HOWEVER, MANUFACTURER USES ONE OF THE CATHODE CONNECTIONS (FIG. A, B, OR C), WHICHEVER IS SUITABLE FOR PICTURE TUBE USED. WHEN PICTURE TUBE REPLACEMENT IS NECESSARY, AND IT IS FOUND THAT VIDEO DRIVE CONTROLS WILL NOT PRODUCE A BLACK AND WHITE PICTURE, THEN CATHODE CONNECTIONS MAY BE CHANGED AS ILLUSTRATED BELOW.

IF PICTURE APPEARS CYAN (BLUE TINGE), CONNECT AS IN FIG. A

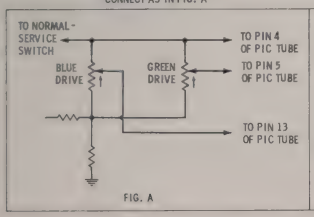


FIG. A

IF PICTURE APPEARS MAGENTA (PURPLISH-RED), CONNECT AS IN FIG. B

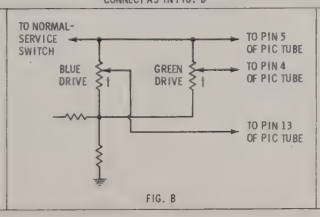


FIG. B

IF PICTURE APPEARS YELLOW, CONNECT AS IN FIG. C

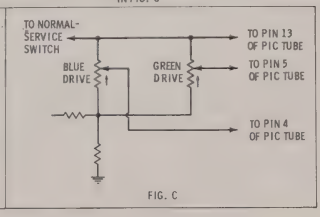


FIG. C

ALT PICTURE TUBE CATH CONNECTIONS

SET 550 FOLDER 2

TV ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

The high voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A1 thru A19 ..... GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545
A20 ..... GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

VIDEO IF ALIGNMENT

Remove Horizontal Output Tube.
Connect the negative lead of a 6 volt bias supply to point (A). Positive to chassis.
Connect the negative lead of a 15 volt bias supply to point (B). Positive to chassis.
Connect the negative lead of a 15 volt bias supply to pin 2 of V23. Positive to chassis.
Connect a clip lead from point (E) to chassis. Preset Sound Reject (R16) at 75% clockwise rotation. Preset Adjacent Sound Adjust (R15) at 50% rotation.
Video IF Shield must be in place during alignment.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V202). Low side to chassis.	43.8MC (Unmod.)	4	DC probe thru 10K to point (D). Common to chassis. Use negative scale.	A1	Adjust for maximum deflection. Use peak with core nearest printed board end of coil. Maintain VTVM reading of 1.5 volts by adjusting signal generator output.
2.	"	"	42.5MC	"	"	A2	"
3.	"	"	45.75MC	"	"	A3	"
4.	"	"	44.0MC	"	"	A4	"
5.	"	"	"	"	"	Mixer Plate Coil	Adjust for maximum deflection with peak at top end of coil.
6.	"	"	41.25MC	"	"	A5, R16	Adjust A5 and Sound Reject (R16) simultaneously for MINIMUM deflection with slug away from chassis. Reduce bias at point (A) if necessary for sufficient indication.
7.	"	"	47.25MC	"	"	A6, R15	Adjust A6 and Adjacent Sound (R15) simultaneously for MINIMUM deflection with slug away from chassis.

OVERALL VIDEO IF RESPONSE CHECK

Connect bias as under "Video IF Alignment".
Connect a .001mfd capacitor in series with a 180Ω resistor from pin 5 (plate) of 6GM6 (V2) to chassis with the resistor next to chassis.
Connect a 1000mmf capacitor across the scope leads.
The Video IF Shield must be in place during alignment.
Connect the DC probe of the VTVM to point (B). Common to chassis. (Use negative scale.)
Use 10MC sweep unless otherwise noted.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT-SCOPE	ADJUST	REMARKS
8.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V202). Low side to chassis.	45MC	42.17MC 45.75MC	4	Vert. Amp. thru demodulator probe (Fig. 1) to pin 5 (plate) of 6BZ6 (V1).		Set sweep output for .1 volt peak to peak on scope. Retouch Mixer Plate Coil and A4 for maximum gain and symmetry of response similar to Fig. 2. Reduce bias to -4 volts at point (A) if necessary.
9.	"	"	"	47.25MC	"	"		Retouch A6 and R15 to place marker in trap notch as in Fig. 2. Remove capacitor and resistor load from 6GM6 (V2). Increase bias at point (A) to -6 volts. Remove .001mfd and 180Ω from pin 5 of V2.
10.	"	"	"	41.65MC 42.17MC 42.75MC 45.0MC 45.75MC	"	Vert. Amp. thru 10K to point (D). Low side to chassis.		Use 3 volts peak to peak on scope. Retouch A1, A2 and A3 for response similar to Fig. 3 with markers as shown. A1 controls tilt, A2 affects 42.17MC side of curve and A3 affects 45.75MC side. Connect a .001mfd capacitor from point (G) to chassis.
11.	"	"	"	41.25MC	"	"		Retouch A5 and R16 to place 41.25MC in trap notch if necessary. Remove .001mfd.
12.	Fig. 4	Across VHF Antenna Terminals thru matching network (Fig.4)	All VHF Channels separately	42.17MC 45.0MC 45.75MC	All VHF Channels separately	"		Decrease bias at point (B) to -3 volts. SLIGHTLY retouch A1, A2 and A3 to correct for any overall tilt that is approximately the same on all channels. Repeat step 11.

TV ALIGNMENT INSTRUCTIONS (cont)

SOUND IF ALIGNMENT

Connect the negative lead of a 10 volt bias supply to point (A). Positive to chassis.
In the following steps, the signal level may be reduced by disconnecting the lead from the terminal at point (F) and connecting a 1meg potentiometer from point (F) to chassis. The lead is then connected to the center arm of the control. This control is then used to control the level of the signal applied to the Sound IF strip. Start alignment with the control turned to maximum signal.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe thru diode probe (Fig. 5) to pin 1 (grid) of 6DT6A (V8). Common to chassis. Connect scope across voice coil of speaker.	A7	Connect a jumper from pin 7 (grid) of V8 to chassis. Adjust for maximum deflection. Set generator output for 1 volt on VTVM. Use peak with slug nearest top of coil form.
14.	"	"	"	"	"	A8, A9	Adjust for maximum deflection. Set generator output for 1 volt on VTVM. Peak with maximum core separation. Repeat steps 13 and 14.
15.	Remove the diode probe and jumper. Turn off signal generator and tune in strongest signal in the area. Set volume control for normal volume. Set A10 so that core is flush with top of coil form. Observe scope and listen to sound. Change bias at point (A) to zero. Adjust A10 clockwise to a peak. Continue clockwise to second louder peak and adjust for maximum output at this second peak. Gradually decrease signal until sound become distorted. Maintain distorted signal and adjust A8 for maximum output.						

ALTERNATE SOUND IF ALIGNMENT USING FM GENERATOR

Connect the negative lead of a 10 volt bias supply to point (A). Positive to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (400∿ FM Mod. 15KC Swp.)	Any non-interfering channel	DC probe thru diode probe (Fig. 5) to pin 1 (grid) of 6DT6A (V8).	A7	Connect a jumper from pin 7 (grid) of V8 to chassis. Adjust for maximum deflection. Set generator for 1 volt on VTVM. Use peak with slug nearest top of coil form.
14.	"	"	"	"	"	A8, A9	Adjust for maximum deflection. Set generator for 1 volt on VTVM. Remove VTVM, diode probe and jumper.
15.	"	"	"	"	Use SCOPE Across speaker voice	A10	Starting with the slug fully counterclockwise, adjust to a peak. Continue turning clockwise until a second peak is reached and adjust for maximum at this second peak. Decrease signal until detector breaks out of lock as indicated by jagged portions of the sine wave on the scope. Retouch A8 for symmetrical breakout similar to Fig. 6.

4.5MC TRAP ALIGNMENT

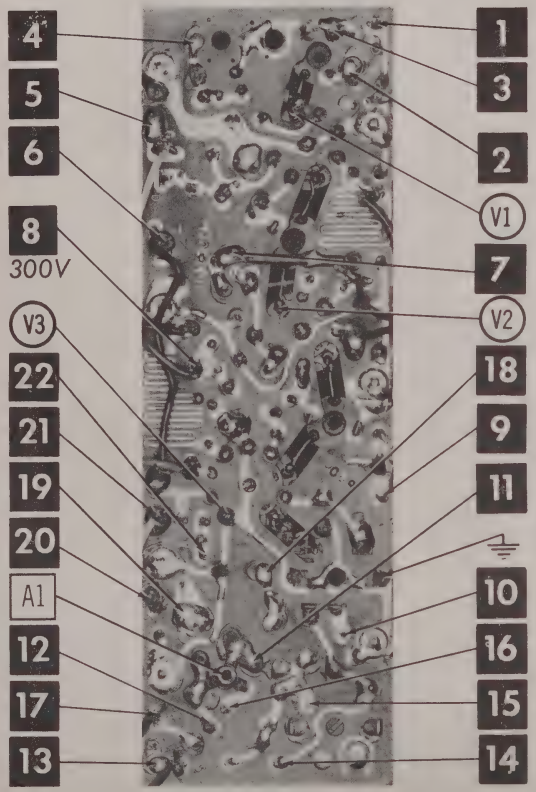
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
16.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (400∿ AM)	Any non-interfering channel	Use SCOPE Across speaker voice coil	A11	Adjust for MINIMUM 400∿ indication on scope.

CHROMA BANDPASS ALIGNMENT

Connect the negative lead of a 7 volt bias supply to point (J). Positive to chassis.
Connect a clip lead from point (E) to chassis.
Turn Color Control fully clockwise.

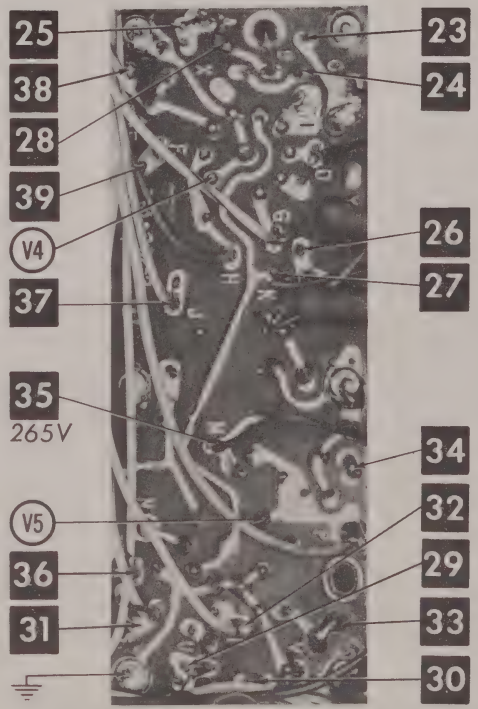
	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
17.	.1mfd	High side to pin 1 (grid) of 6AU6A (V17). Low side to chassis.	3.58MC (3-5MC Swp.)	3.08MC 4.08MC	Any non-interfering channel	Vert. Amp. thru demodulator probe (Fig. 7) to pin 2 (grid) of 12AZ7 (V21). Low side to chassis.	A12, A13	Adjust for response similar to Fig. 8 with equal marker height.
18.	Turn the Brightness and Contrast controls fully counterclockwise. Connect 330Ω resistor and 4mfd capacitor in series from plate (pin 5) of 6AU6A (V17) to chassis.							
19.	Direct	High side to ungrounded tube shield over Mixer-Osc. tube. Low side to chassis. Connect high side of separate marker generator to ungrounded tube shield of Chroma Bandpass Amp. (V17). Low side to chassis.	45MC (10MC Swp.)	3.08MC 4.08MC	Any non-interfering channel	Vert. Amp. thru demodulator probe (Fig. 7) to pin 2 (grid) of 12AZ7 (V21). Low side to chassis.	A14	Remove clip lead between point (E) and chassis. Adjust A14 for response similar to Fig. 9. Peak with core nearest chassis end of coil form.
20.	"	"	"	"	"	"		Disconnect the 330Ω resistor and 4mfd capacitor from V17. Check for response similar to Fig. 10. If necessary, retouch A12, A13 and A14 to obtain desired response.

SEE PAGE 17 FOR WAVEFORMS

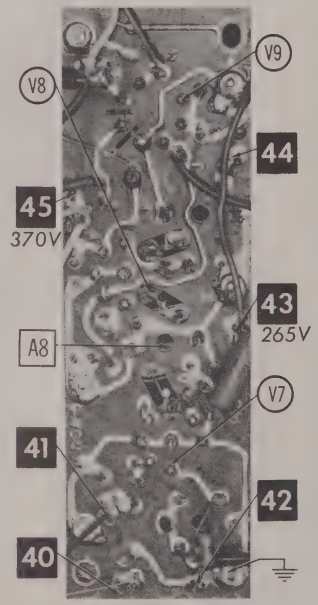


A Howard W. Sams CIRCUITRACE Photo

VIDEO IF - SYNC SEP. PRINTED BOARD

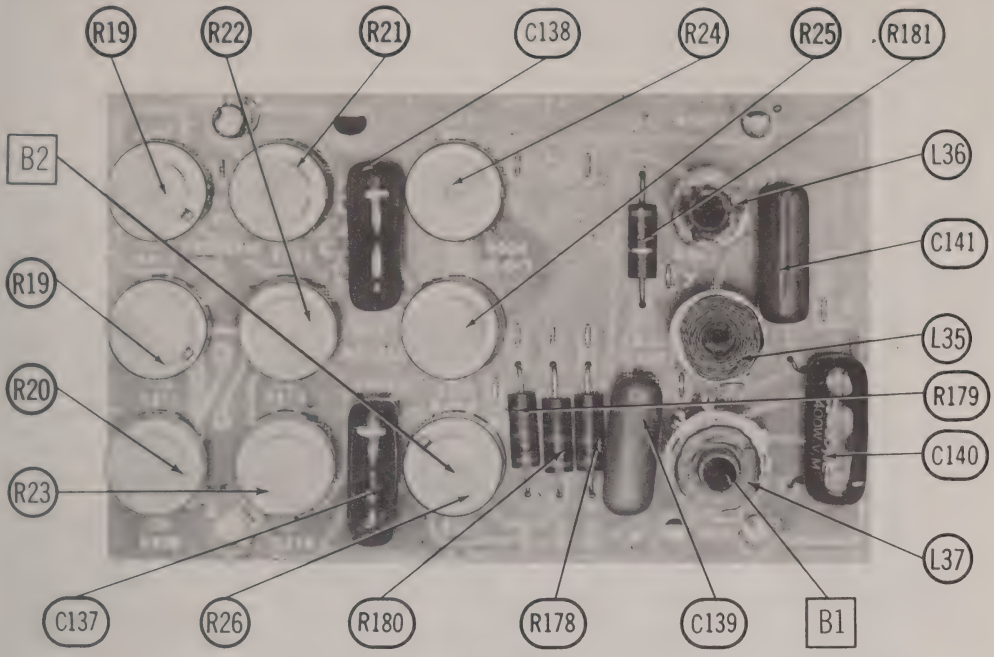


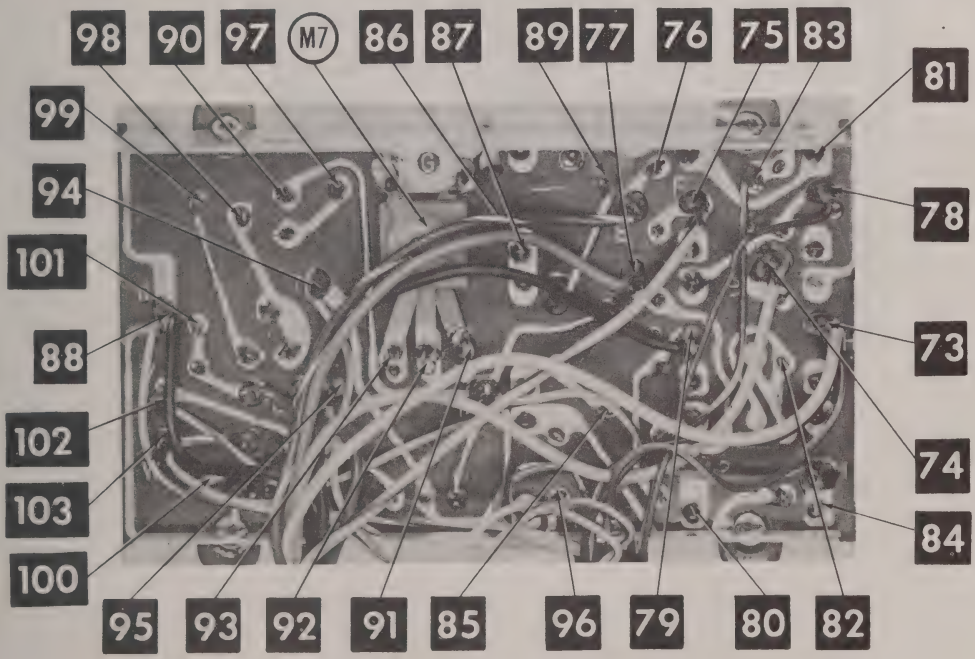
VIDEO AMP. - OUTPUT PRINTED BOARD



ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

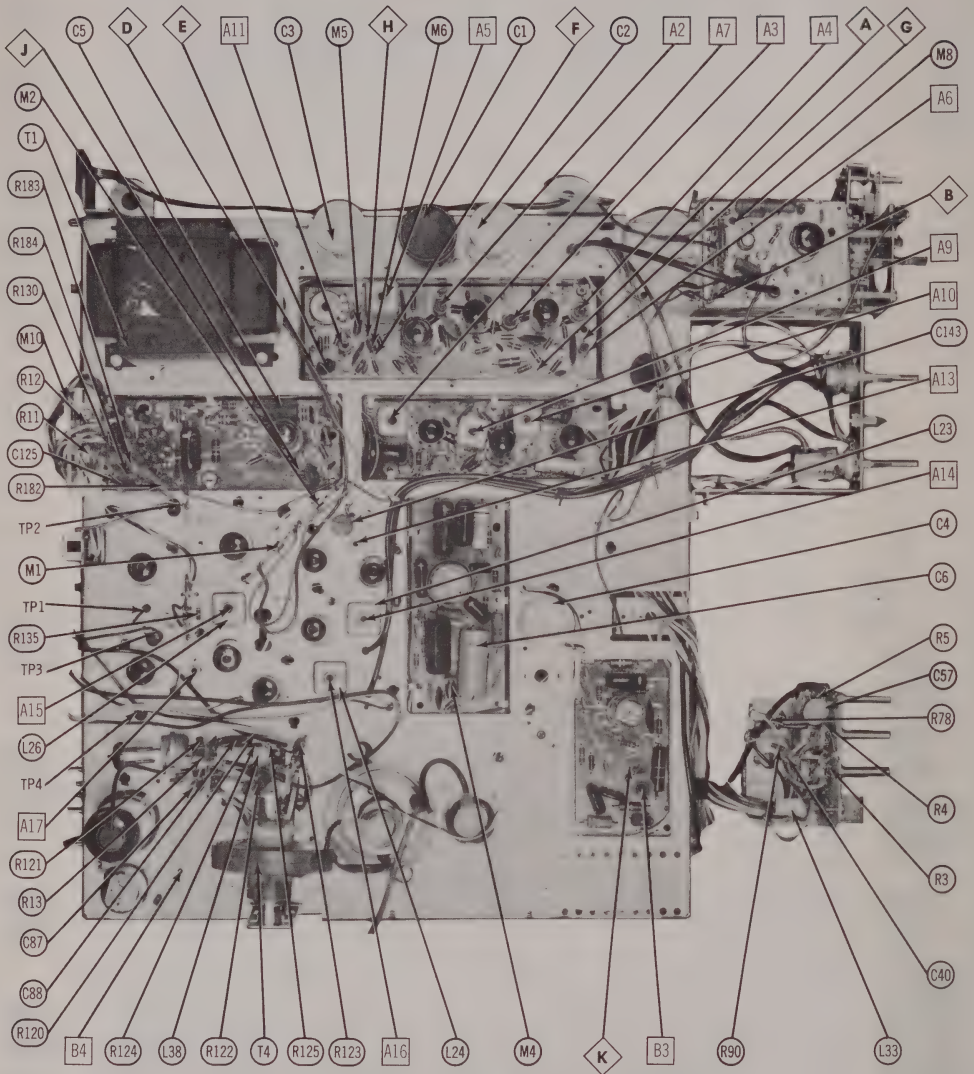
SOUND PRINTED BOARD





A Howard W. Sams CIRCUITRACE® Photo

CONVERGENCE PRINTED BOARD
SET 550 FOLDER 2



TP1 .5V CHROMA REF OSC CONTROL GRID
TP2 210V RED GUN GRID
TP3 195V GREEN GUN GRID
TP4 195V BLUE GUN GRID

CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING	REPLACEMENT DATA IRC PART No	WORKMAN TV PART No	REMARKS
R163	1meg			
R164	4700Ω 1W			
R165	120K			
R166	10K 2W			
R167	470K			
R168	3300Ω			
R169	1meg			
R170	15K 2W			
R171	120K			
R172	470K			
R173	1meg			
R174	15K 2W			
R175	120K			
R176	470K			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No	WORKMAN TV PART No	REMARKS
R177	390Ω 3W	PW3-390	3G-390	
R178	100Ω 1W			
R179	100Ω 1W			
R180	100Ω 1W			
R181	82Ω 1W			
R183	5600Ω 4W	PW5-5600	4G-5600	
R183	5600Ω 2W			
R184	27K 4W	PW5-27K	4G-27K	
R185	910Ω 18W			#109792
R186	22K 1W			
R187	33K 1W			
R188	79Ω (Cold)			#107291
R189	2.2meg			

Note 1. May not be used in some versions. * Alternate Value #RCA Victor Part Number

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L1	1st Video IF	[illegible]					
L2	47.25MC Trap	109255					
L3	2nd Video IF	109253					
L4	3rd Video IF	109254					
L5A	4th Video IF	105294					
B	41.25MC Trap						
L6	RF Choke (12uh)	105308		BC-566	4622	RTC-8522	T861
L7	4.5MC Trap	105295					
L8	Peaking (82uh)	102201 ①		TV-193 †	6110 †	RTC-8573 †	T302 †
L9	RF Choke (1.8uh)	78466		BC-562	4604	RTC-8516	T856
L10A	Peaking	109838					
B	Peaking						
L11	Peaking (62uh)	109826		TV-193	6110	RTC-8573	T302
L12	Peaking (82uh)	109840		TV-193	6110	RTC-8573	T302
L13	Peaking (130uh)	100131 ③		TV-195 ▲	6133 ▲	RTC-8585 ▲	T307 ▲
L14A	Peaking	109834					
B	Peaking						
L15	RF Choke (1.8uh)	109248 ③		BC-562	4604	RTC-8516	T856
L16	RF Choke (12uh)	100441		BC-566	4622	RTC-8522	T861
L17	RF Choke (1.8uh)	109248		BC-562	4604	RTC-8516	T856
L18	RF Choke (5.6uh)	109171		SW-631	4609	RTC-8519	T820
L19	1st Sound IF	109261					
L20	2nd Sound IF	109262					
L21	Quadrature	106393					
L22	Chroma Takeoff	107290					
L23	1st Bandpass	105213					
L24	Burst Phase Det.	105214					
L25	Reactance Plate	105216					
L26	Osc.	107837					
L27	RF Choke (1.5uh)	109825		BC-562	4604	RTC-8516	T856
L28	Peaking (620uh)	109257		TV-205	6146	RTC-8582	T326
L29	Peaking (620uh)	109257		TV-205	6146	RTC-8582	T326
L30	RF Choke (5.6uh)	109171		SW-631	4609	RTC-8519	T820
L31	RF Choke (5.6uh)	109171		SW-631	4609	RTC-8519	T820

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	Workman TV PART No.	NOTES
L32	Horiz. Osc.	109251							
L33	Horiz. Waveform (Horiz. Hold)	109237							
L34	Horiz. Linearity (.28MH-1MH)	105196							
L35	Right Red/Green #1 (3.5MH-7.5MH)	105065							
L36	Right Red/Green #2 (2.5MH-4.5MH)	105066							
L37	Right Horiz. Blue #1 (Pri. 3.6MH-9.4MH) (Sec. .15MH-3.6MH)	109180							
L38	Focus Coil	109264							
L39	Convergence Yoke								
A	Blue	109164							
B	Red	109154							
C	Green	109164							

FILTER CHOKE

ITEM No.	RATINGS CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ^)	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L40	.400A	18Ω	.54 Hy.	102134				C-40X	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V ② 2.95A	150V ② 1.6A AC	6.3V ④ 2.5A	109286					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V ④ 11.5A								

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	Vert. Output	109850					
T3	Yoke (Horiz. 12MH) (Vert. 39MH)	109845					
T4	Horiz. Output	109221					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	SEC.	REPLACEMENT DATA RCA Victor PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T5	8700Ω	3-4Ω	100037	A-3020	A-3823	26S48	S-18X	

SPEAKER

ITEM No.	TYPE SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA RCA Victor PART No.	QUAM PART No.	NOTES
SP1	4" x 6"	PM	3-4Ω	107477 ①	46A1	① Used in Models 21ICB412, U; 21ICD425, 26, 27, U; 21ICDR425, 26, 27, U.
	3½"	PM	6-8Ω	102119 ②	3A15T29	② Used in Models 21ICD445, 6, 7 & U; 21ICD456 & U; 21ICD464 & U; 21ICD475, 6, 7 & U; 21ICDR446 & U; 21ICDR456 & U; 21ICDR464.
	6" x 9"	PM	3-4Ω	107304 ③	69A3	
	4"	PM	3-4Ω	107474 ④	4A1	
	8"	PM	3-4Ω	107475 ⑤	8A2I	③ Used in Models 21ICB392 & U. ④ Used in Models 21ICD435, 6, 7 & U.

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA RCA Victor PART No.	RCA PART No.	SARKES TARZIAN PART No.	NOTES
M1	.430A	106379	1N1763	F6	
M2	.430A	106379	1N1763	F6	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA RCA Victor PART No. FUSE	RCA Victor PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M3	3½" length #26 Wire		102792					

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA RCA Victor PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	NOTES
M4	Selenium	109328 *	80C1 *		* Horiz. AFC Diode, Dual Selenium, Common Cath.
M5		78675B ♦		1N295 ♦	♦ Crystal Diode, Video Detector
M6		78675B †		1N295 †	† Crystal Diode, Sound Detector
M7A B C		105064 †			† Selenium, 3 Section, Convergence Circuit

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M8	Tuner (KRK98D)	109793	VHF, Ch. CTC11A
	Tuner (KRK98K)	109849	VHF, Ch. CTC11H
	Tuner (KRK98J)	109815	VHF, Ch. CTC11C
	Tuner (KRK98C)	109831	VHF, Ch. CTC11E
	Tuner (KRK99D)	109793	VHF with UHF Provisions, Ch. CTC11B
	Tuner (KRK99K)	109849	VHF with UHF Provisions, Ch. CTC11J
	Tuner (KRK99J)	109815	VHF with UHF Provisions, Ch. CTC11D
	Tuner (KRK99C)	109848	VHF with UHF Provisions, Ch. CTC11F
	Tuner (KRK86AA)	106499	UHF, Ch. CTC11J, B, & D
	Tuner (KRK86AB)	106499	UHF, Ch. CTC11F
M9	Crystal	105330	3.5MC
M10	Switch	46780	Normal-Service (DPDT Slide Type)
M11	Delay Line	109837	
M12	Circuit Breaker	109835	
M13	Magnet Assembly	103172	Lateral
M14	Magnet	105024	Convergence (3 Req'd)
	Printed Circuit	109841	Video Circuit, Less Tubes
	Printed Circuit	109236	Picture Circuit, Less Tubes
	Printed Circuit	109223	Sound Circuit, Less Tubes
	Printed Circuit	109828	Vertical Circuit, Less Tubes
	Printed Circuit	109225	Horizontal Circuit, Less Tubes
	Printed Circuit	109185	Convergence Circuit, Less Tubes

WIRING DATA

High Voltage Lead	Use BELDEN No.	8869
Shielded Hook-up Wire	Use BELDEN No.	8685 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8534 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No.	8874
300Ω Tuner Input Lead	Use BELDEN No.	8225
300Ω Antenna Lead-in	Use BELDEN No.	8230 or 8275
Antenna Rotor Cable	Use BELDEN No.	8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8486 (Round) - 8 Conductor

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

DESCRIPTION	PART NO.	MODEL NO.	21ICB392, U	21ICB412, U	21ICD425, U	21ICD426, U	21ICD427, U	21ICD435, U	21ICD436, U	21ICD437, U	21ICD445, U	21ICD446, U	21ICD447, U	21ICD456, U	21ICD464, U	21ICD475, U	21ICD476, U	21ICD477, U	21ICDR425, U	21ICDR426, U	21ICDR427, U	21ICDR446, U	21ICDR456, U	21ICDR464
Safety Glass	109811		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mask	109813		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob- Channel Selector & Dial Assembly	109192			X																				
Knob- Channel Selector	109398		X																					
Knob- "	109711										X	X	X	X										
Knob- "	109712				X	X	X	X	X	X														
Lever-VHF Channel Selector	106491																	X	X	X	X	X	X	X
Knob-UHF Channel Selector	107269		X	X																				
Knob- "	109447										X	X	X	X	X	X	X					X	X	
Knob- "	109275				X	X	X	X	X	X									X	X	X			
Dial-UHF Channel Indicator	107266		X	X																				
Dial- "	109276				X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	
Knob-Fine Tuning	106596		X	X																				
Knob- "	109189				X	X	X	X	X	X									X	X	X	X	X	X
Knob- "	109448										X	X	X	X	X	X	X							
Knob-Contrast, Brightness, Vert. Hold, Horiz. H.	109274				X	X	X	X	X	X									X	X	X			
Knob- " "	107605		X	X																				
Knob- " "	109571										X	X	X	X	X	X	X					X	X	X
Knob-Volume, Brightness	109273		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob- " "	109814		X	X																				
Knob-Focus	109246		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob-Color	109450										X	X	X	X	X	X	X					X	X	X
Knob- "	109449				X	X	X	X	X	X									X	X	X			
Knob-Color, Tint	107603		X	X																				
Knob-Tint	109272				X	X	X	X	X	X									X	X	X			
Knob-Tint	109451										X	X	X	X	X	X	X					X	X	X
Leg-Cabinet	X5129				X	X	X												X	X	X			
Leg-Cabinet, Mahogany	X5248										X													
Leg-Cabinet, Walnut	X5249											X										X		
Leg-Cabinet, Oak	X5250												X											
Leg-Cabinet, Mahogany	X5206														X									
Leg-Cabinet, Walnut	X5207																X							
Leg-Cabinet, Oak	X5208																	X						
Cabinet-Black	ZA815		X																					
Cabinet-Black	ZA729			X																				
Cabinet-Mahogany	ZA736				X																			
Cabinet-Mahogany	XA789															X								
Cabinet-Mahogany	ZA739																	X						
Cabinet-Oak Grain	ZA738					X																		
Cabinet-Oak	XA791																	X						
Cabinet-Oak	ZA741																				X			
Cabinet-Walnut Grain	ZA737					X																		
Cabinet-Walnut *	X4790																	X						
Cabinet-Walnut	ZA740																				X			

SET 550 FOLDER 2

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	GENERAL ELECTRIC • RAYTHEON • SYLVANIA • USE	TYPE
V1	1st Video IF Amp.	6BZ6
V2	2nd Video IF Amp.	6GM8
V3	3rd Video IF Amp. - Sync Sep.	6AW8A
V4	Video Amp. - Color Killer	6AW8A
V5	Video Output	12BY7A
V6	AGC Keying - Noise Inv.	6DT8A
V7	Sound IF Amp.	6EW6
V8	Audio Detector	6DT8A
V9	Audio Output	6AQ8A
V10	Vert. Mult. - Vert. Output	6EM7
V11	Horiz. AFC - Horiz. Osc.	6CG7
V12	Horiz. Output	6DQ6
V13	Damper	6AU4GTA
V14	HV Rectifier	3A3
V15	Focus Rectifier	1V2
V16	HV Regulator	6BK4
V17	Chroma Bandpass Amp.	6AU6A
V18	Burst Amp.	6EW6
V19	Chroma Sync Phase Det.	6AL5
V20	Chroma Ref. Osc. Control - Chroma Ref. Osc.	6GH8
V21	X Demodulator - Z Demodulator	12AZ7
V22	R-Y Amp. - B-Y Amp.	6CG7
V23	Horiz. Blanking Amp. - G-Y Amp.	6CG7

PICTURE TUBE

ITEM No.	REPLACEMENT DATA: RCA Victor PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
V24	21FBP22		21FBP22 ①			① Aluminized

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	VOLT.	REPLACEMENT DATA: RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	180	250	106384	AFH-31-75	XA0315	WP131.5	TMS-1480	TVL-1540	
C2A	180	250	109240	AFHS-4-117-49		FP341.6	TMT-3259	TVLS-3711.2	*
B	20	450				TC75	TD-50-50	TVA-1709	
C	150	75							
D	50	50							
C3A	80	450	109239	AFH4-86-25		FP385.5	TMQ-4589	TVLS-3744.5 *	
B	450					TT25X20		TVA-1716	
C	10	450							
D	20	25							
C4	80	450	109836	AFH-55	A0510	FP149	TMS-1800	TVL-1735	
C5	2	350	78920	PRS705	BR345	TC595	TD-2-450	TVA-1701	
C6	50	150	109227	PRS480	BR5015	TC49	TD-50-150	TVA-1414	
C7	40	25	105756	PRS470	BR4015	TC48	TD-40-150	TVA-1413	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C9	.01		BPD-01	BD-103	BYA10S1	CCD-103	B-110	5HK-S10
C10	200	200V	P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C11	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C12	9	NPO 5%	NPO-SI 10	TCZ-10	C10V8C	CCTO-100	CNO-410	10TCC-Q10
C13	150	NPO 5%		DTZ-150			CNO-315	10TCC-T15
C14	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C15	680	N2200 10%	#102237			CCD-102		
C16	.001			BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C17	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C18	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C19	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C20	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C21	330	10%	DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C22	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C23	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C24	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C25	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C26	560	N1500 5%	#109142					
C27	.0022		BPD-0022	BD-222	BYA10D22	CCD-222	B-222	5HK-D22
C28	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C29	10	N150 10%	#105302					10TCP-Q10
C30	100	N033 10%	#104304					
C31	22	N150	#109259					10TCP-Q22
C32	18	NPO		NPO-SI 18	TCZ-18	C10Q18C	CCTO-180	CNO-418	10TCC-Q18
C33	.0022			BPD-0022	BD-222	BYA10D22	CCD-222	B-222	5HK-D22
C34	.001			BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C35	.01			BPD-01	BD-103	BYA10S1	CCD-103	B-110	5HK-S10
C36	.1	200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C37	.22	200V		P288N-22		CUB2P22	2DP-4-224	GEM-2022	2TM-P22
C38	390	10%		DI-390	DD-391	L10T39	CCD-391	GP339	10TS-T39
C39	390	10%		DI-390	DD-391	L10T39	CCD-391	GP339	10TS-T39
C40	.0015			BPD-0015	BD-152	BYA10D15	CCD-152	B-215	5HK-D15
C41	.1	400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-201	4TM-P10
C42	180	10%		DI-180	DD-181	L10T18	CCD-181	GP318	10TS-T18
C43	56	6000V		HVD-60-56	D060-560		6CCD-560	6DY-456	60GA-Q56
C44	.001			BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C45	1.5	N3300	#103411						
C46	10	N150	#105302						10TCP-Q10
C47	10	N1500 5%	#106384						
C48	680			DD-681	BYA10T68	CCD-681	B-368	10TS-T68	
C49	.01			BPD-01	BD-103	BYA10S1	CCD-103	B-110	5HK-S10
C50	.01			BPD-01	BD-103	BYA10S1	CCD-103	B-110	5HK-S10
C51	.01			BPD-01	BD-103	BYA10S1	CCD-103	B-110	5HK-S10
C52	.01			BPD-01	BD-103	BYA10S1	CCD-103	B-110	5HK-S10
C53	.047	200V		P288N-047	DD-503	CUB2S47	2DP-3-473	GEM-2047	2TM-S47
C54	560			DI-560	DD-561	L10T56	CCD-561	B-356	10TS-T56
C55	.0068			BPD-0068	BD-682	BYA10D68	CCD-682	B-368	5HK-D68
C56	.001			BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C57	.0047			BPD-0047	DD-472	BYA10D47M	CCD-472	B-347	5HK-D47
C58	.0027	1600V 10%				DPME8D3	16DP-3-302	GEM-1623	MB-D3
C59	.0033			BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C60	150	10%		DI-150	DD-151	L10T15	CCD-151	GP315	10TS-T15
C61	.0022			BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C62	.0015			BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C63	.027	600V 10%		P684CM-027		DPME8S27	6DP-3-273	GEM-1613	6PS-S27
C64	.1	600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C65	.22	400V		P488N-22		CUB4P22	4DP-5-224	GEM-2022	4TM-P22

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C66	.0068	400V 10%	V84CS268-10		PME6D8	6DP-1-682	GEM-16268	6TM-D68
C67	680		DI-680	DD-681	BYA10T68	CCD-681	B-368	10TS-T68
C68	680		DI-680	DD-681	BYA10T68	CCD-681	B-368	10TS-T68
C69	.001	2000V 10%						
C70	.0082	1000V	#105320		CUB1SD8	1SDP-3-802	GEM-16282	MB-D8
C71	.47	200V	P1084CM-0082	DD-822	CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C72	47	NPO 10%	P288N-47		C10Q47C	CCTO-470	CNO-447	10TCC-Q47
C73	68	NPO 10%	NPO-DI 68	DTZ-68	C10Q68C	CCTO-680	CNO-468	10TCC-Q68
C74	27		DI-27	DD-270	L10Q27	CCD-270	GP427	10TS-Q27
C75	680	10%	DI-680	DD-681	5R5T68	CCD-681	GP368	10TS-T68
C76	820	10%	DI-820	DD-821	5R5T82	CCD-821	GP382	10TS-T82
C77	.1	200V	P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C78	.001		BPD-001	BD-102	BYA10D1	CCD-102	B-210	5HK-D10
C79	390	1500V 5%	#105344					
C80	.01	600V	P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C81	680	5%	1469-00068		5R5T68	CM-19B-681J	MCJ249	MS-S68
C82	.0015	600V 10%	P688CM-0015		PME6D5	6DP-1-152	GEM-16215	6TM-D15
C83	.01	600V	P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C84	.1	600V	P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C85	.047	600V	P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C86	.047	600V	P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C87	.1	200V	P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C88	130	6000V	HVD-60-120	D060-121		6CCD-121		60GA-T12
C89	22		DI-22	DD-220	L10Q22	CCD-220	GP422	10TS-Q22
C90	.15	200V 10%	V84CS215-10		PM2P15	2DP-3-154	GEM-2015	2TM-P15
C91	.12	600V 10%						
C92	270	2000V N1500 10%	#109228				VCM-20-271K	
C93	.0033		BPD-0033	DD-332	BPD-0033	CCD-332	B-233	5HK-D33
C94	560	2500V 10%	#109843					
C95	100	3000V 5%	#105306					
C96	560	2500V 10%	#109843					
C97	47	4000V						
C98	120	N750	HVD-60-47	D060-470	HVB50Q47	6CCD-470	6DY-447	60GA-Q47
C99	.01		N750-SI 120	TCN-120	C10T12U	CCTN-121	CN7-312	10TCU-T12
C100	.001		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C101	330	5%	BPD-001	DD-102	BYA10D1	CCD-102	B-120	5HK-D10
C102	330	5%	1469-00033		5R5T33	CM-19B-331J		MS-333
C103	120	10%	1469-00033		5R5T33	CM-19B-331J		MS-333
C104	.01		DI-120	DD-121	L10T12	CCD-121	GP312	10TS-T12
C105	10	NPO	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C106	820	10%	N750-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C107	330		DI-820	DD-821	5R5T82	CCD-821	GP382	10TS-T82
C108	270		DI-330	DD-331	L10T33	CCD-331	B-332	10TS-T33
C109	.01		DI-270	DD-271	L10T27	CCD-271	B-327	10TS-T12
C110	.047	200V	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C111	.1	200V	P288N-047	DD-503	CUB2S47	2DP-3-473	GEM-4147	2TM-S47
C112	.01		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C113	4		BPD-01	D6-103	BYA10S1	CCD-103	B-110	5HK-S10
C114	.01		C10V4C		CCTO-050			10TCC-V50
C115	15	NPO 10%	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C116	.01		N750-DI 10	DTZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C117	220	N750 10%	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C118	82	NPO 10%	N750-DI 320	DTN-220	C10T22U	CCTN-221	CN7-322	10TCU-T22
C119	.01		N750-DI 82	DTZ-82	C10Q82C	CCTO-820	CNO-482	10TCC-Q82
C120	.001		DI-330	DD-331	L10T33	CCD-331	B-332	10TS-T33
C121	.001	5%	DI-270	DD-271	L10T27	CCD-271	B-327	10TS-T12
C122	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C123	.22	400V	P488N-22		CUB4P22	4DP-5-224	GEM-4022	4TM-P22
C124	.15	400V	P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C125	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C126	33		DI-33	DD-330	L10T33	CCD-330	GP433	10TS-Q33
C127	.01	600V	P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C128	.15	400V	P488N-15		CUBP15	4DP-4-154	GEM-4015	4TM-P15
C129	33		DI-33	DD-330	L10T33	CCD-330	GP433	10TS-Q33
C130	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C131	.01	600V	P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C132	15	NPO 10%	NPO-DI 15	DTZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C133	.15	400V	P488N-15		CUBP15	4DP-4-154	GEM-4015	4TM-P15
C134	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C135	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C136	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C137	.082	200V 10%			DPM8S82	6DP-4-823		6PS-S82
C138	.1	200V 10%	V84CS2P1-10		PM2P1	2DP-3-104	GEM-201	2TM-P10
C139	.1	200V	P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C140	.1	400V	P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C141	.056	400V 10%	P564CM-057		DPM8S656	6DP-3-563		6PS-S56
C142	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C143	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C144	47		DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C145	47	2000V	HVD-30-47	D030-470	HVA30Q47	3CCD-470	3DY-447	30GA-Q47
C146	.047	600V	P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47

RCA Victor Part Number

Note 1. May not be used in some versions.

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500Ω	½	107413 ①	F1-1				Color
B	1meg	½		RPL-57		↑ QJ-1316	■ UE43398	Volume
	200k Tap	½						
C	Switch			Not Req.				Power Off-On (Push-Pull)
R2A	1200Ω	½	107413 ②	F1-7		↑ QJ-1317	▲ UE4238	Tint
B	250K	½		R2-34				Brightness
R3A	1meg	½	109286					Vert. Hold
B	1meg	½						Killer Threshold
R4A	500Ω	½	109265					Contrast
	400Ω Tap	½						
B	100K	½						Vert. Linearity
R5A	2.5meg	½	109287					Tone
B	2.5meg	½						Height
R6A	500K	½	109469	TT-59	B47-500K-8	B11-133	PTA55L	Kine Bias
B	Shaft	½		Not Req.	Not Req.	TM4	Not Req.	
R7A	1meg	½	105205	TT-69	B47-1meg-8	B11-137	SU-54	Red Screen
B	Shaft	½		Not Req.	Not Req.	TM4	Not Req.	
R8A	1meg	½	105205	TT-69	B47-1meg-8	B11-137	SU-54	Green Screen
B	Shaft	½		Not Req.	Not Req.	TM4	Not Req.	
R9A	1meg	½	105205	TT-69	B47-1meg-8	B11-137	SU-54	Blue Screen
B	Shaft	½		Not Req.	Not Req.	TM4	Not Req.	

CONTROLS (cont)

ITEM No.	RATING: RESISTANCE	WATTS	REPLACEMENT DATA: RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R10A	7500Ω	½	109236	AB-13	A47-7500-S	B11-115	TA55L	AGC
B	Shaft			AK-1	FS3i-1/4	TM4	Not Req.	
R11A	5000Ω	½	109475	TT-10	B47-5000-S	B11-114	PTA53L	Green Drive
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R12A	5000Ω	½	109475	TT-10	B47-5000-S	B11-114	PTA53L	Blue Drive
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R13	10Ω	2(WW)	109243					Horiz. Centering
R14A	500K	½	105210	TT-59	B47-500K-8	B11-133	SU-50	High Voltage Adjust
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R15	10K	½	106388					Adjacent Sound Reject
R16	750Ω	½	105297					Sound Reject
R17	10Ω	2(WW)	109242					Vert. Centering
R18	150Ω	2(WW)	109472					Vert. R.G. Diff. Amp.
R19	120Ω	2(WW)	108330					Vert. R.G. Master Amp.
R20	30Ω	2(WW)	108321					Vert. Blue Amp.
R21	30Ω	2(WW)	108321					Vert. R.G. Diff. Tilt
R22	60Ω	2(WW)	105059				PFL60A	Vert. R.G. Master Tilt
R23	60Ω	2(WW)	105059				PFL60A	Vert. Blue Tilt
R24	60Ω	2(WW)	105059				PFL60A	Horiz. Left R-G-3
R25	60Ω	2(WW)	105059				PFL60A	Horiz. Left R-G-4
R26	120Ω	2(WW)	108320					Horiz. Left B-2

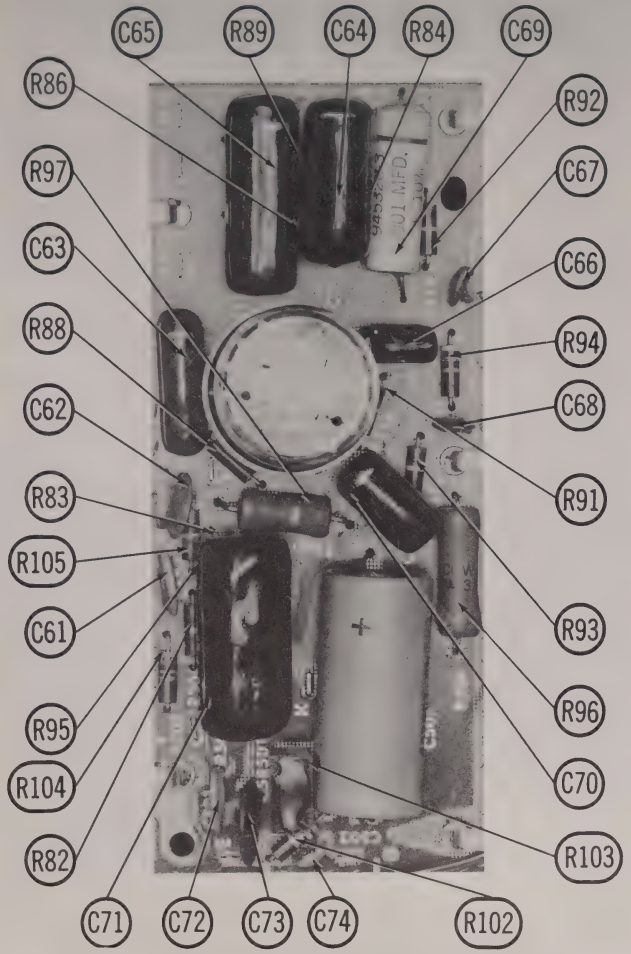
① Remote Control Models (Chassis CTC11E, F) use Color Control (Pt. #107562) & Volume (Pt. #107581).
② Remote Control Models (Chassis CTC11E, F) use Tint & Brightness Control (Pt. #107560).
† "CONCERTRIKTT" Equivalent: K-46 Kit with Base Elements and Shafts: B11-103, P17-031 (Panel) B13-137X, R33-122 (Rear)
‡ "CONCERTRIKTT" Equivalent: K-6 Kit with Base Elements and Shafts: B17-305, P17-031 (Panel) (Not available as a factory assembled unit). B11-130, R1-118 (Rear)
■ "STA-LOC" Equivalent: FA52L, RUP16T254, OF937.
▲ "STA-LOC" Equivalent: FA152R, RU254L, OF937, 1S625.

RESISTORS

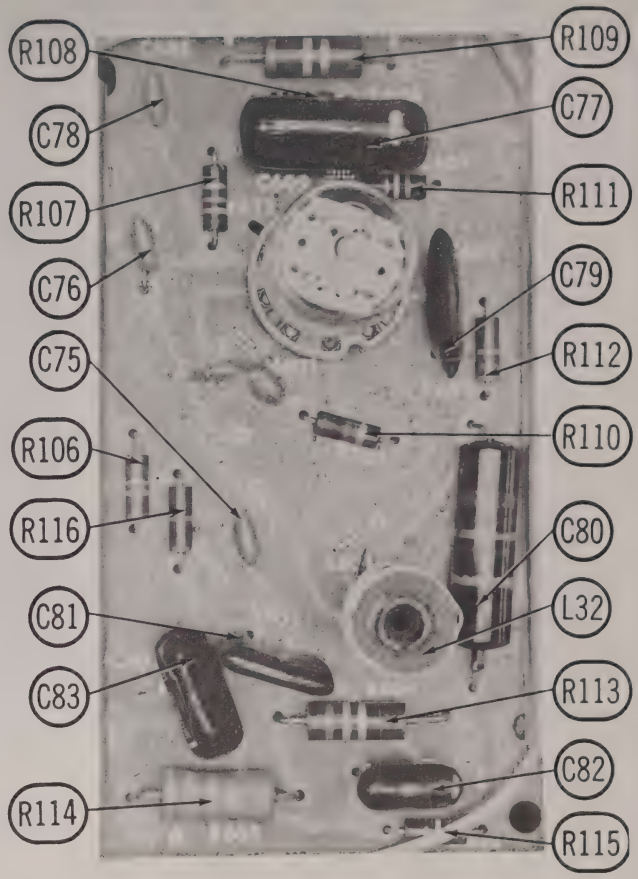
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No.	REMARKS
R27	10meg			
R28	4700Ω 5%	PW3-3300	3G-3300	
R29	1000Ω			
R30	220K	PW3-1500	3G-1500	
R31	150Ω			
R32	47Ω			
R33	1500Ω 1W			
R34	4.7meg			
R35	150K			Matched Pair
R36	150K			
R37	100Ω			
R38	68Ω 5%			
R39	33000Ω 7W	PW7-3300	7G-3300	
R40	470Ω			
R41	150Ω			
R42	56000Ω 5W	PW5-5600	5W-SQ-5600	
R43	10K			
R44	82000Ω 5%			
R45	12K 5%			
R46	39K			
R47	12K 4W	PW5-12K	4G-12K	
R48	220Ω			
R49	330K			
R50	47K 1W			
R51	1200			
R52	15000Ω 5%			
R53	18000Ω 5%			
R54	6800Ω			
R55	82K			
R57	27000Ω 3W	PW3-2700	3G-2700	Note 1
R57	33K			
R58	68K			
R59	68K 1W			
R60	22K 2W			
R61	220Ω			
R62	10000Ω			
R63	1.5meg			(1meg) *
R64	2700Ω			
R65	22K			
R66	12000Ω			
R67	560K			
R68	560K			
R69	470K			
R70	47K			
R71	68000Ω 3W	PW3-6800	3G-6800	
R72	470K			
R73	47Ω			
R74	560K			
R75	470K			
R76	27K 1W			
R77	470Ω			
R78	47K			
R79	470Ω 1W			
R80	470Ω 1W			
R81	470K			
R82	100K			
R83	100K			
R84	390K			
R85	2.2meg			Note 1
R86	2.2meg			
R87	22K			
R88	10000Ω			
R89	2.2meg			
R90	100K			
R91	100K			
R92	150K			
R93	100K			
R94	47K			

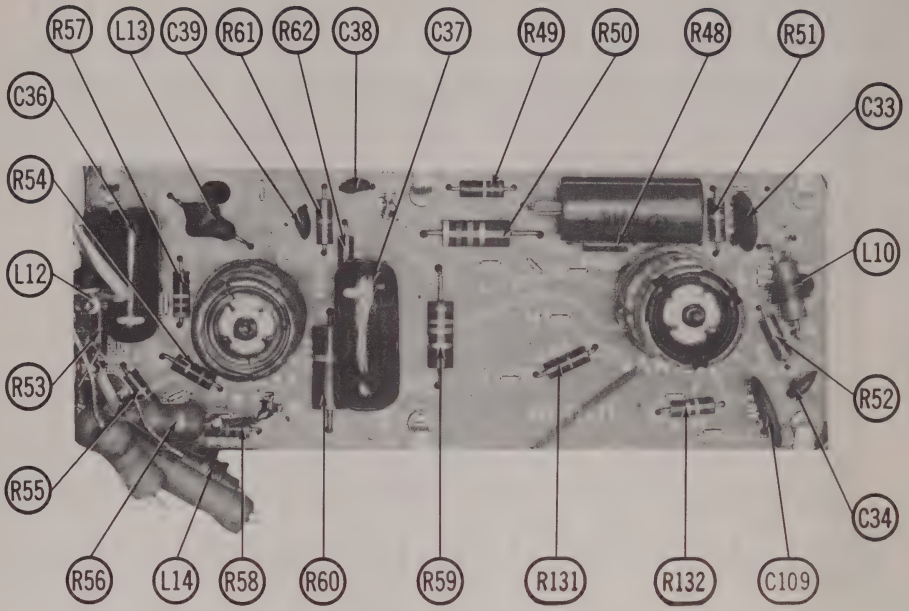
ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No.	REMARKS
R95	39K 5%			
R96	3300Ω 3W	PW3-3300	3G-3300	
R97	47000Ω 2W			
R98	1500Ω 3W	PW3-1500	3G-1500	
R99	560Ω			
R100	560Ω			
R101	3.9Ω @25°C			#109454
R102	390K			
R103	390K			
R104	47K			
R105	100K			
R106	150K			
R107	27K			
R108	47K			
R109	150K 1W			
R110	10000Ω			
R111	180K			
R112	68K			
R113	27K 1W			
R114	33K 2W			
R115	110K 5%			
R116	10meg			
R117	100Ω			
R118	47Ω			
R119	13K 7W	PW7-13K	7G-13K	
R120	1meg 2W			
R121	3.6Ω			
R122	22meg 2W 5%			
R123	22meg 2W 5%			
R124	22meg 2W 5%			
R125	100K			
R126	1.5meg 1W			Matched Pair
R127	1.5meg 1W			
R128	10K			
R129	47000Ω 2W			
R130	18K			
R131	10meg			
R132	150K			
R133	47K			
R134	220K			
R135	4.7meg			
R136	470Ω			
R137	390Ω			
R138	8200Ω			
R139	100K			
R140	47K			
R141	1000Ω			
R142	39K 5%			
R143	5.6meg			
R144	470K			Matched Pair
R145	470K			
R146	8.2meg			
R147	220Ω			
R148	33K			
R149	18000Ω 5%			
R150	68K 1W			
R151	27K			
R153	6800Ω 5%			
R153	47K			
R154	8200Ω			
R155	47K 1W			
R156	3900Ω 1W			Matched Pair
R157	3900Ω 1W			
R158	36Ω 1W 5%			
R159	8200Ω 1W			
R160	33K			
R161	220K			Note 1
R162	47K 2W			



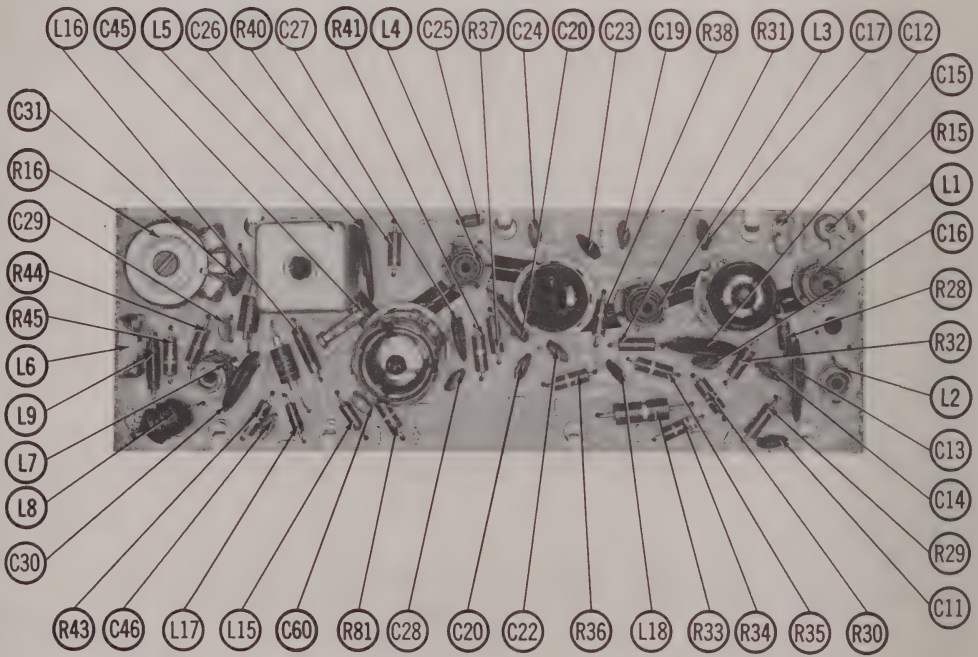
VERT. MULT. - OUTPUT PRINTED BOARD



HORIZ. AFC - OSC. PRINTED BOARD



VIDEO AMP — OUTPUT PRINTED BOARD



VIDEO IF — SYNC SEP. PRINTED BOARD

A Howard W. Sams CIRCUITRACE® Photo

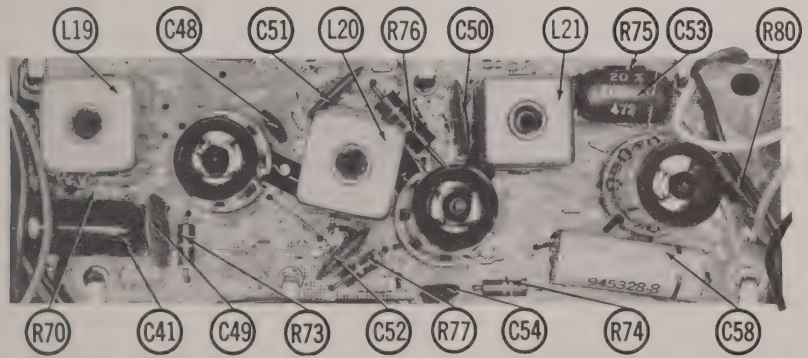
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VERT. MULT. — OUTPUT PRINTED BOARD

A Howard W. Sams CIRCUITRACE® Photo

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

HORIZ. AFC — OSC. PRINTED BOARD



SOUND PRINTED BOARD

MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Suggested Alignment Tools: Bl, R-G-1, R-G-2 .....
GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

Connect a 0-500MA meter in series with the cathode circuit of the Horizontal Output tube (V12). Connect a .47mfd capacitor across the meter terminals. Connect a 0-1500 microammeter in series with the cathode circuit of the HV Regulator (V16). Connect the Vertical Amp. of the scope to point (K). Low side to chassis. Connect the DC probe of the VTVM thru a high voltage probe to the High Voltage Rectifier "cup". Common to chassis.

Set the Focus to the center of its range. Set the High Voltage Adjust control at two thirds clockwise rotation.

Tune the receiver to a station signal and synchronize the picture. Adjust the Horizontal Hold (Waveform Slug) for a waveform similar to Fig. 11 with the round and sharp peaks at equal amplitudes. Keep the picture in sync during this adjustment with the Horizontal Frequency (B3).

Adjust the Horizontal Linearity Slug (B4) for MINIMUM current indication on the 500MA meter, not to exceed 200MA.

Adjust the High Voltage Adjust for 24KV on the VTVM. Check the current reading on the 0-1500 microammeter. It should not exceed 850 microamps.

AGC ADJUSTMENT

Tune in the strongest station signal in the area. Connect the Vertical Amp. of the scope thru a low capacity probe to point (E). Common to chassis. Adjust the AGC control for 11 volts peak to peak on the scope.

COLOR AFC ALIGNMENT

Set the Tint control to the center of its range. Turn the Killer control fully counterclockwise. Connect the DC probe of the VTVM thru 470K to pin 1 (cathode) of the Phase Detector (V19). Common to chassis. Connect the Color Bar Generator to the antenna terminals. Connect a short clip lead from pin 1 (grid) of the Burst Amplifier to chassis. Adjust A15 for maximum deflection on the VTVM. If no reading is obtained the 3.58 MC Osc. is not operating, in which case A17 should be adjusted to start the Osc. and make the color lock in on the screen. Adjust A15 for maximum deflection.

Adjust A16 for maximum deflection on the VTVM making sure that the 3.58MC Osc. is running and locked in.

Remove the clip lead from the grid of the Burst Amplifier. Connect clip lead from TP-1 to chassis. Disconnect VTVM from pin 1 of the Phase Detector. Adjust A17 for zero beat while observing the screen. (Color bars will stand still on the screen or drift very slowly).

Remove the clip lead from TP-1 and repeat adjustment of A17 using a low chroma low level signal. Adjust for zero beat and best hold.

Connect the Vertical Amp. of scope to TP-2. Low side to chassis. Observe bar pattern on scope and retouch A16 if necessary to obtain proper response curve similar to R-Y signal in Fig. 12 with equal change when rotating the Tint control from one extreme to the other. Return the Tint control to the center of its range. Move the scope connection to TP-4. Check for B-Y signal as shown in Fig. 12. Move the scope connection to TP-3. Check for G-Y signal as shown in Fig. 12.

With a strong black and white signal, adjust the Killer Threshold control so that all color disappears from the picture. Recheck with a color signal to make sure that the setting is not killing on color.

PRELIMINARY CONVERGENCE ADJUSTMENT

Connect the RF output of a white dot generator to the antenna terminals. Preset all Red, Green and Blue Horizontal and Vertical Convergence controls and coils to the center of their ranges.

Adjust the Red, Green and Blue Convergence Magnets and the Lateral Magnet to produce a white dot in the center of the screen. Keep the receiver in sharp focus while making these adjustments. The Convergence Magnets may be reversed to produce a greater range of adjustment if necessary.

COLOR PURITY ADJUSTMENTS

If necessary, demagnetize picture tube and associated components. Set the red tabs of the Purity Magnet together.

Loosen the yoke clamp and slide the deflection yoke to the rear as far as possible. Shunt TP-3 & TP-4 to chassis thru individual 100K Resistors.

Slide the Purity Magnet around the neck of the picture tube and at the same time spread the red tabs apart to produce a uniform red screen area at the center of the screen. Move the yoke forward and adjust for best overall red screen without neck shadow. Tighten yoke clamp.

GRAY SCALE ADJUSTMENT

Turn the Bias and Screen controls fully counterclockwise. Move the "Normal-Service" switch on the rear apron of the chassis to "Service" position. Advance the Screen controls so that each control just produces a horizontal line on the screen.

If any one of the Screen controls fail to provide a line, advance Bias control slightly. Readjust other screen controls so the screen is just lighted. Return the "Normal-Service" switch to "Normal". Alternately adjust the Red and Green Video Drive controls to produce a normal black and white picture. Check the picture from lowlight areas to highlight areas at all brightness levels to check the picture for proper tracking.

VERTICAL CONVERGENCE ADJUSTMENTS

Recheck the "Preliminary Convergence Adjustments" for correct setting of the Red, Green and Blue Magnets and Lateral Magnet to produce a white dot in the center of the screen. Loosen the two screws holding the Convergence Board, slide the board to the left and remove. Fasten the board to the two screws provided on the top rear rail of the cabinet with the controls facing forward so that convergence adjustments may be made from the front of the receiver. Slots are provided in the lower edge of the board for making this mounting.

Switch the dot generator to vertical bars. Connect a 100K Resistor from TP-4 to chassis.

Referring to the center vertical bar, adjust the Vertical R-G Master Amp. control to converge the red and green bars at the bottom end. Adjust the Vertical R-G Master Tilt to converge the red and green bars at the top end. Touch up both controls for best convergence along the entire length of the center vertical bar.

Switch the generator to horizontal bars. Referring to the center portion of the lower horizontal bars, adjust the Vertical R-G Differential Amp. control to converge the red and green bars. Adjust the Vertical R-G Differential Tilt control to converge the center portion of the top horizontal green and red bars. Retouch both controls until the center portion of all red and green horizontal bars are converged.

Switch the generator to the dot or cross hatch pattern and converge the center area of the screen using the convergence magnets. Switch back to the horizontal bars. Remove the 100K Resistor from point TP-4. Advance the Vertical Blue Amp. control to cause displacement of the center portion of the bars at the top and bottom of the screen. Adjust the Vertical Blue Tilt control to cause the vertical displacement of the center portion of the horizontal bars to be equal at top and bottom. Switch the generator to dots or cross hatch and again converge the center area of the screen. Retouch the Vertical Blue Tilt and Amp. controls for best convergence along the vertical center of the screen.

HORIZONTAL CONVERGENCE ADJUSTMENTS

Switch the generator to cross hatch pattern and recheck convergence in the center area.

Adjust B-1 to make the blue line at the right center a straight line.

Adjust B-2 to make the blue line from the center to the left side of the screen a straight line.

Adjust R-G-1 to make the vertical lines at the right side of the screen converge.

Adjust R-G-2 to make the horizontal red and green lines at the right side converge.

Adjust B-1 to make the blue line at the right center fall on the converged red and green line. Retouch R-G-1 for convergence of the vertical lines at the right side.

Adjust R-G-3 to make vertical lines at the left side converge. Adjust R-G-4 to make the red and green horizontal lines at the left side of the screen converge. After adjusting R-G-4 repeat the adjustment of R-G-3 to compensate for any interaction. Retouch B-2 to make the blue line at the left center fall on the converged red and green lines.

The screen should now show proper convergence.

After completion of the vertical and horizontal convergence, repeat the Gray Scale Adjustment.

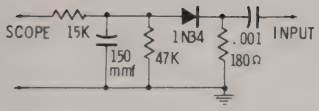


FIG. 1

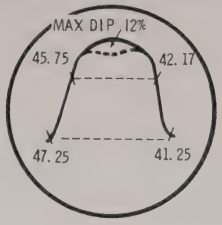


FIG. 2

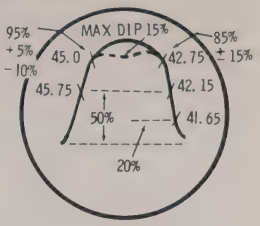


FIG. 3

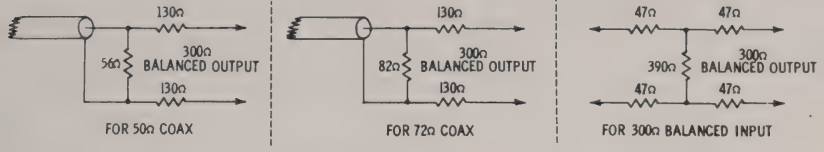


FIG. 4

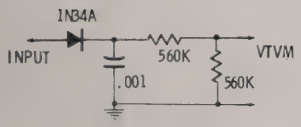


FIG. 5

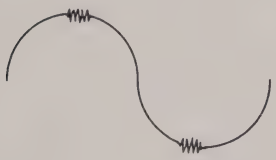


FIG. 6

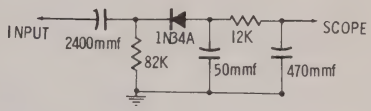


FIG. 7

FIG. 8

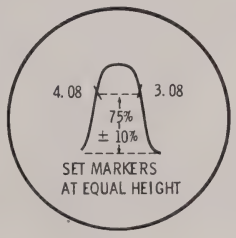


FIG. 9

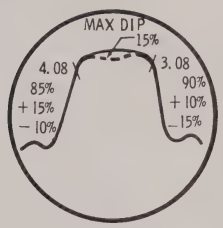


FIG. 10

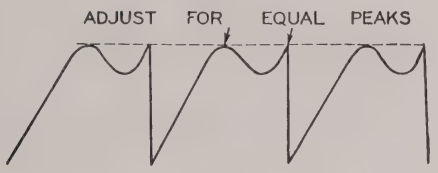


FIG. 11

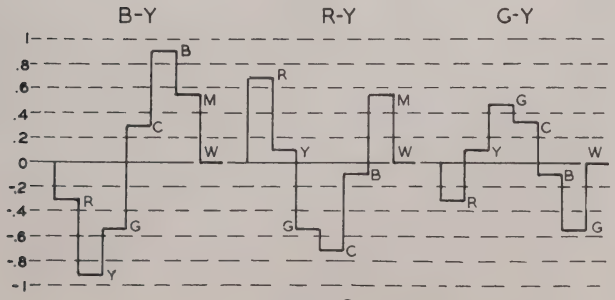
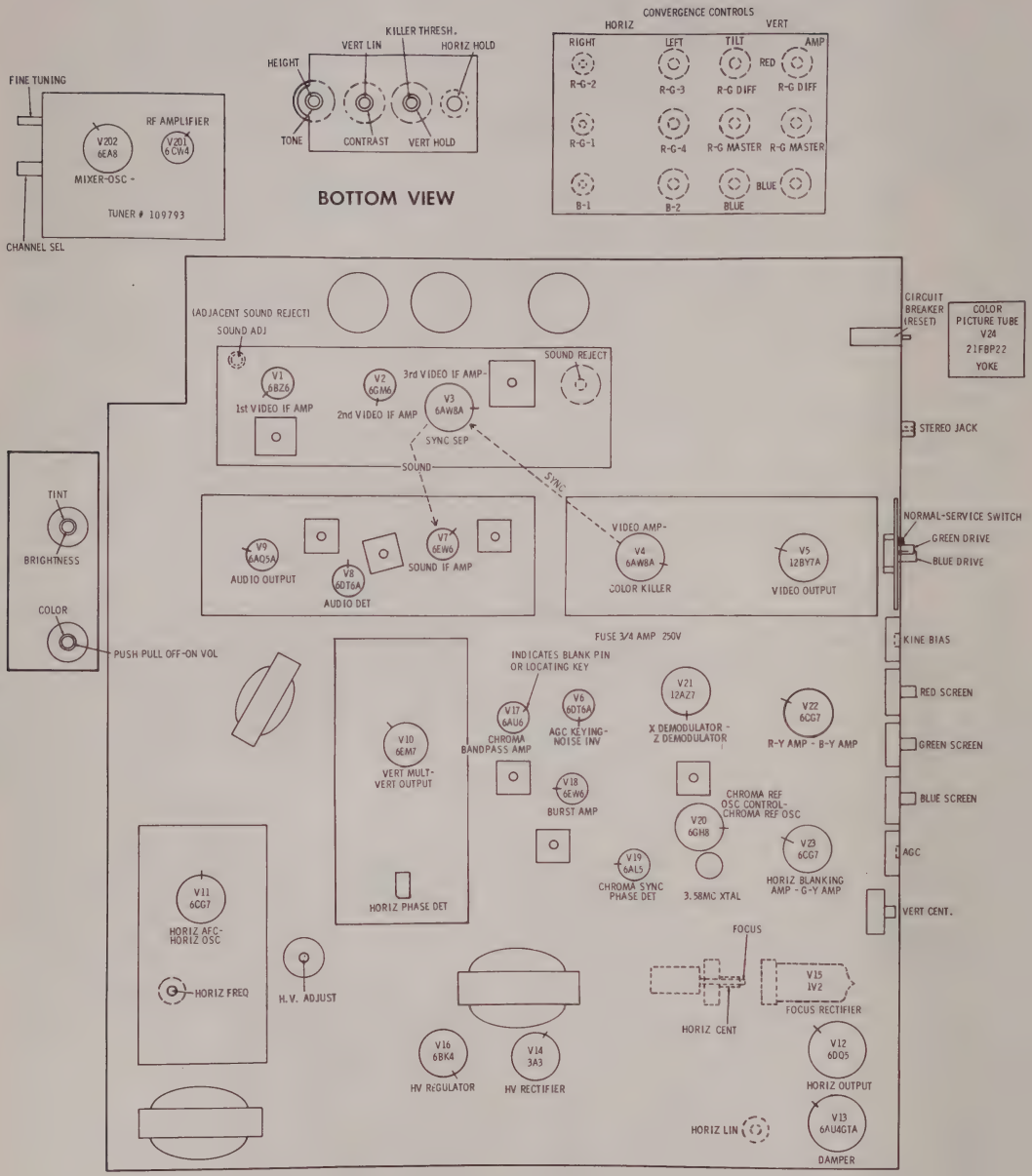


FIG. 12

TUBE PLACEMENT CHART



RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	220K	1550Ω	FIL	FIL	▪220Ω	▪220Ω	1500Ω		
V2	6GM6	70K	INF	FIL	FIL	†3400Ω	†3400Ω	▪68Ω		
V3	6AW8A	0Ω	4.7meg	†35K	FIL	FIL	150Ω	.1Ω	†7000Ω	†7000Ω
V4	6AW8A	0Ω	● 5.9meg	370K	FIL	FIL	1600Ω	6000Ω	†50K	†11K
V5	12BY7A	● 380Ω	● 350K	0Ω	FIL	FIL	FIL	†5800Ω	†18K	NC
V6	6DT6A	47K	● 2000Ω	FIL	FIL	780K	†4500Ω	472K		
V7	6EW6	5.5Ω	47Ω	FIL	FIL	†7700Ω	†7700Ω	0Ω		
V8	6DT6A	5Ω	470Ω	FIL	FIL	†580K	†28K	470K		
V9	6AQ5A	NC	470Ω	FIL	FIL	†1800Ω	†1400Ω	●10K		
V10	6EM7	● 2.3meg	†1860Ω	2100Ω	● 600K	●†3.3meg	0Ω	FIL	FIL	
V11	6CG7	†40K	800K	1000Ω	FIL	FIL	†60K	†240K	0Ω	0Ω
V12	6DQ5	10meg	FIL	0Ω	†13K	10meg	0Ω	FIL	†13K	TOP CAP †14Ω
V13	6AU4GTA	NC	NC	300K	NC	†38Ω	NC	FIL	FIL	
V14	3A3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †650Ω
V15	1V2	NC	NC	NC	66meg	66meg	TP	NC	NC	†14Ω
V16	6BK6	†38Ω	FIL	NC	NC	● 1meg	NC	FIL	NC	TOP CAP INF
V17	6AU6A	220K	0Ω	FIL	FIL	†1400Ω	†1400Ω	390Ω		
V18	6EW6	30K	39K	FIL	FIL	†1000Ω	†930Ω	0Ω		
V19	6AL5	5.5meg	5.5meg	FIL	FIL	220Ω	0Ω	220Ω		
V20	6GH8	†25K	47K	†48K	FIL	FIL	†9100Ω	0Ω	680Ω	5.5meg
V21	12AZ7	†4800Ω	● 100Ω	855Ω	FIL	FIL	†4800Ω	●100Ω	855Ω	FIL
V22	6CG7	†15K	1meg	390Ω	FIL	FIL	†15K	1meg	390Ω	0Ω
V23	6CG7	†47K	200K	390Ω	FIL	FIL	†15K	1meg	390Ω	0Ω
V24	21FBP22	FIL	● †110K	● †300K	†3000Ω	●†4000Ω	● †110K	● †150K	Pin 9 67meg	Pin 11 ● †250K
		Pin 12 ● †110K	Pin 13 ● †3500Ω	Pin 14 FIL						
V201	6CW4	Pin 2 †11K	Pin 4 2meg	Pin 8 0Ω	Pin 10 FIL	Pin 12 FIL				
V202	6EA8	†9100Ω	100K	▲2200Ω	FIL	FIL	▲3200Ω	0Ω	INF	▲5600Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

● THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM OUTPUT OF M1.
‡ MEASURED FROM PIN 3 OF V13.
NC NO CONNECTION
▪ MEASURED FROM PIN 2 OF V2.
▲ MEASURED FROM PIN 8 OF V202.
TP TIE POINT

TUNER ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS FOR TUNER #KRK98 AND KRK99

Allow a 20 minute warm-up period for the receiver and test equipment.

VHF RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.
Connect the negative lead of a 2.5 volt bias supply to point ⓣ. Positive to chassis.

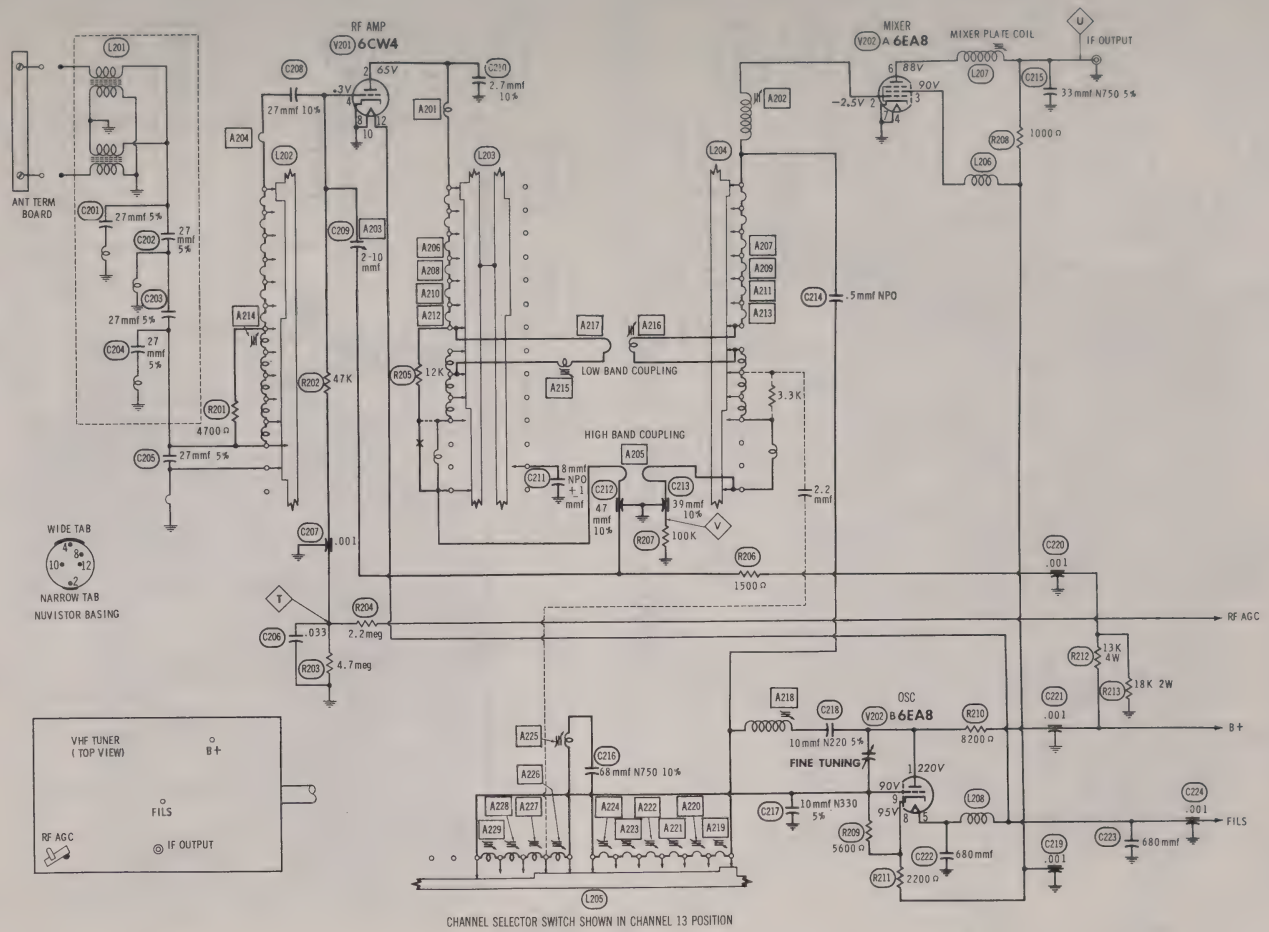
	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across VHF Antenna Terminals thru pad (Fig. 201).	195MC	193.25MC 197.75MC	10	Vert. Amp. to point ⓤ. Low side to chassis.	A201, A202	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown. If oscillation is obtained and distorts the waveform, adjust A203 for MINIMUM gain and repeat adjustments of A201 and A202.
2.	"	"		"	"	A203	Increase bias to -10 to -15 volts. Adjust A203 for MINIMUM response.
3.	"	207MC	205.25MC 209.75MC	12	"	A204	Return bias to 2.5 volts. Adjust A204 for maximum gain at center of curve.
4.	"	"	"	"	"	A201, A202, A205	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown. Adjust A201 for correct freq. Adjust A202 for correct tilt. Position A205 for bandwidth.
5.	"	195MC	193.25MC 197.75MC	10	"	A206, A207	Adjust for flat response.
6.	"	189MC	187.25MC 191.75MC	9	"	A208, A209	"
7.	"	183MC	181.25MC 185.75MC	8	"	A210, A211	"
8.	"	177MC	175.25MC 179.75MC	7	"	A212, A213	"
9.	"	85MC	83.25MC 87.75MC	6	"	A214, A215, A216, A217	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown. Adjust A214 for amplitude, A215 for frequency, A216 for proper tilt and A217 for bandwidth.
10.	Turn off generator.			12	Use VTVM DC probe to point ⓥ. Common to chassis.		Check Oscillator injection voltage. It should be between -2.0 to -5.0 volts.

VHF OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.
Use 10MC sweep unless otherwise noted.
Connect the negative lead of a 2.5 volt bias supply to point ⓣ. Positive to chassis.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Across VHF Antenna Terminals thru pad (Fig. 201).	Not Used	257MC	13	Vert. Amp. to point ⓤ. Low side to chassis.	A218	Adjust for zero beat.
12.	"	"	251MC	12	"	A219	"
13.	"	"	245MC	11	"	A220	"
14.	"	"	239MC	10	"	A221	"
15.	"	"	233MC	9	"	A222	"
16.	"	"	227MC	8	"	A223	"
17.	"	"	221MC	7	"	A224	"
18.	"	"	129MC	6	"	A225	"
19.	"	"	123MC	5	"	A226	"
20.	"	"	113MC	4	"	A227	"
21.	"	"	107MC	3	"	A228	"
22.	"	"	101MC	2	"	A229	"

continued PAGE 29



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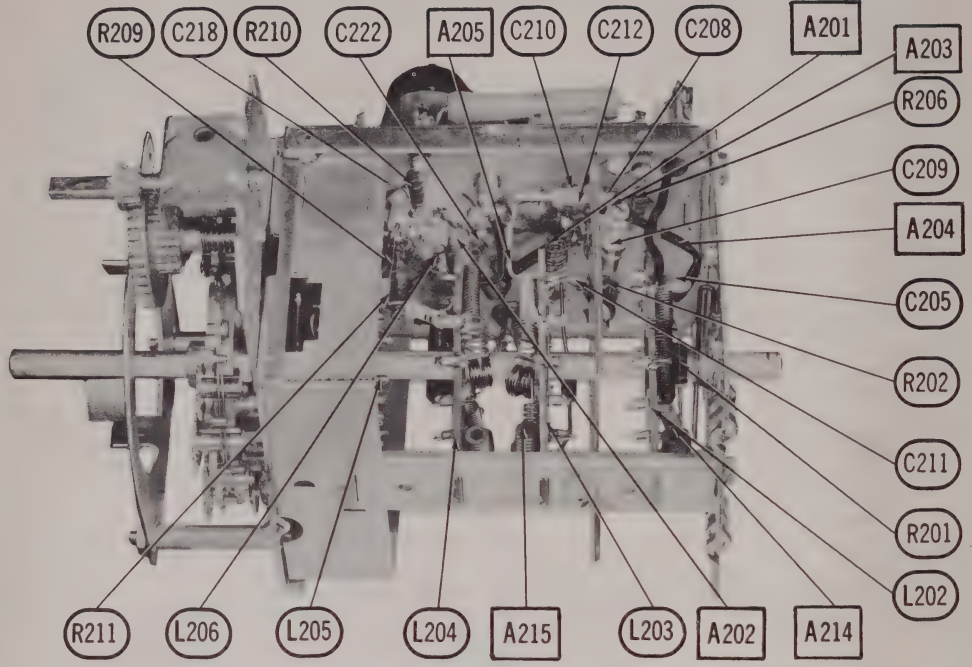
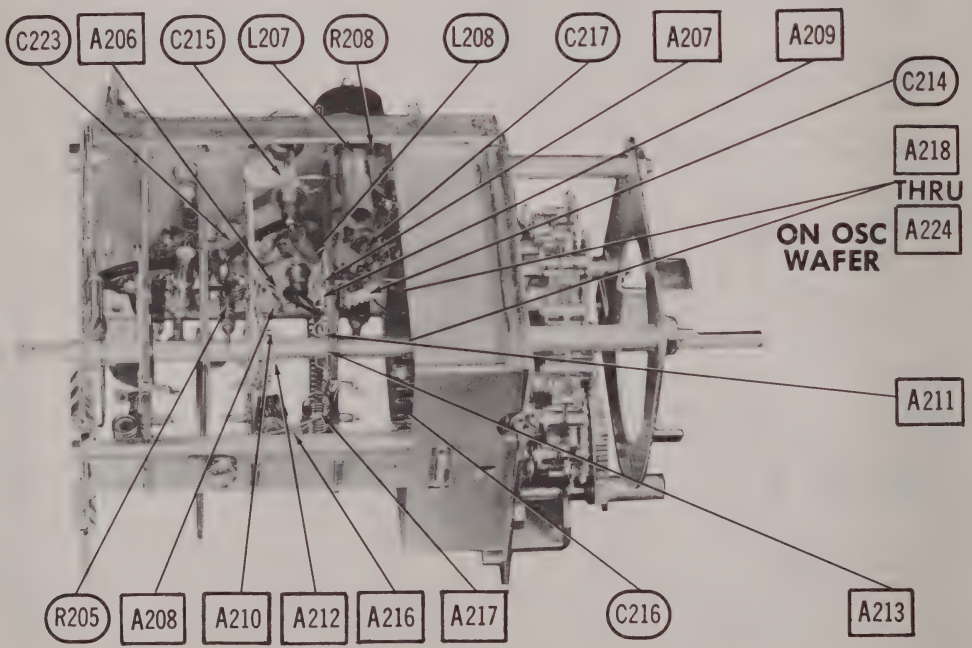
VHF TUNER KRK98C, D, J, K

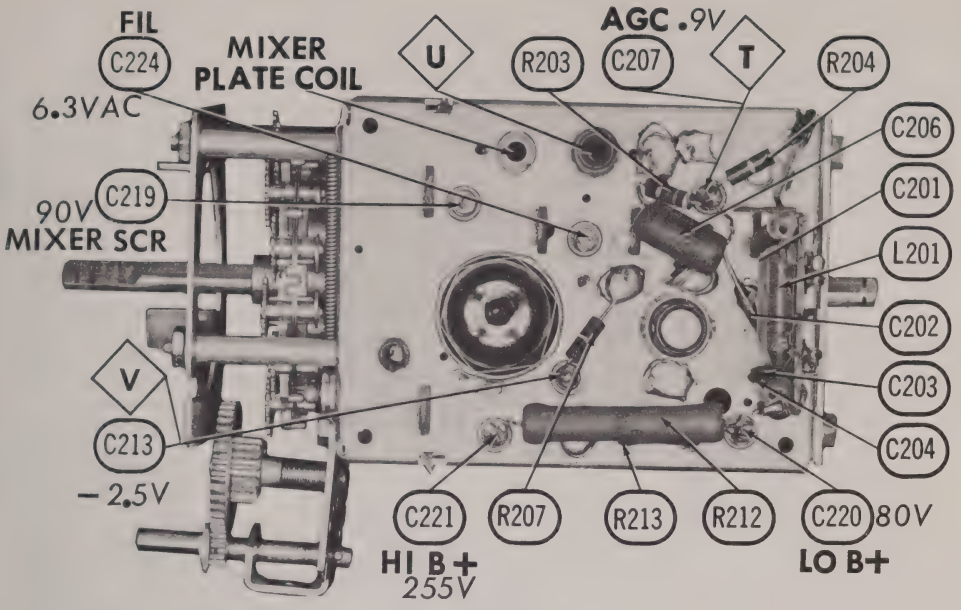
RCA VICTOR CHASSIS CTC11A, B, C, D, E, F, H, J, CRK3F, CTP7B



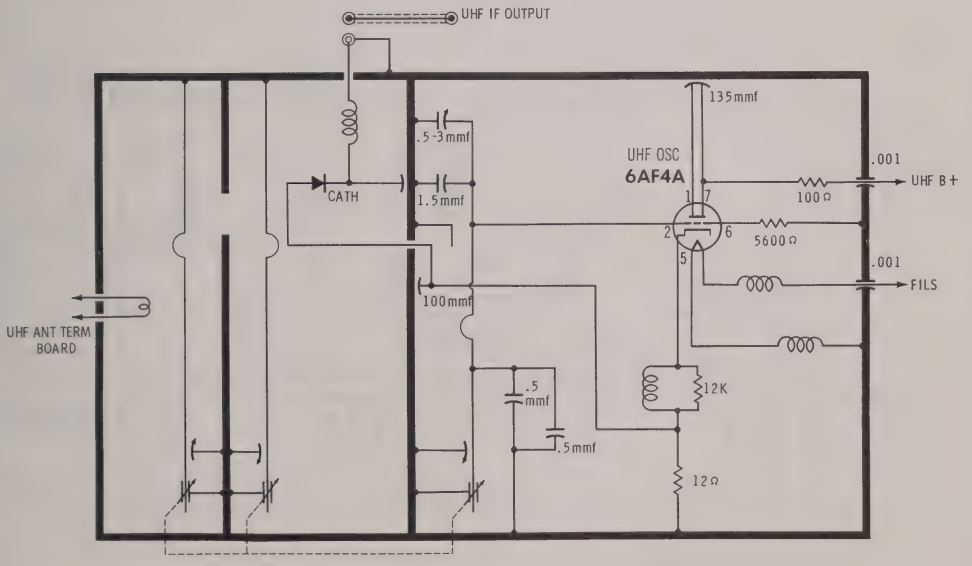
VHF TUNER KRK98D - RIGHT SIDE



VHF TUNER KRK98D - LEFT SIDE



VHF TUNER KRK98D - TOP VIEW



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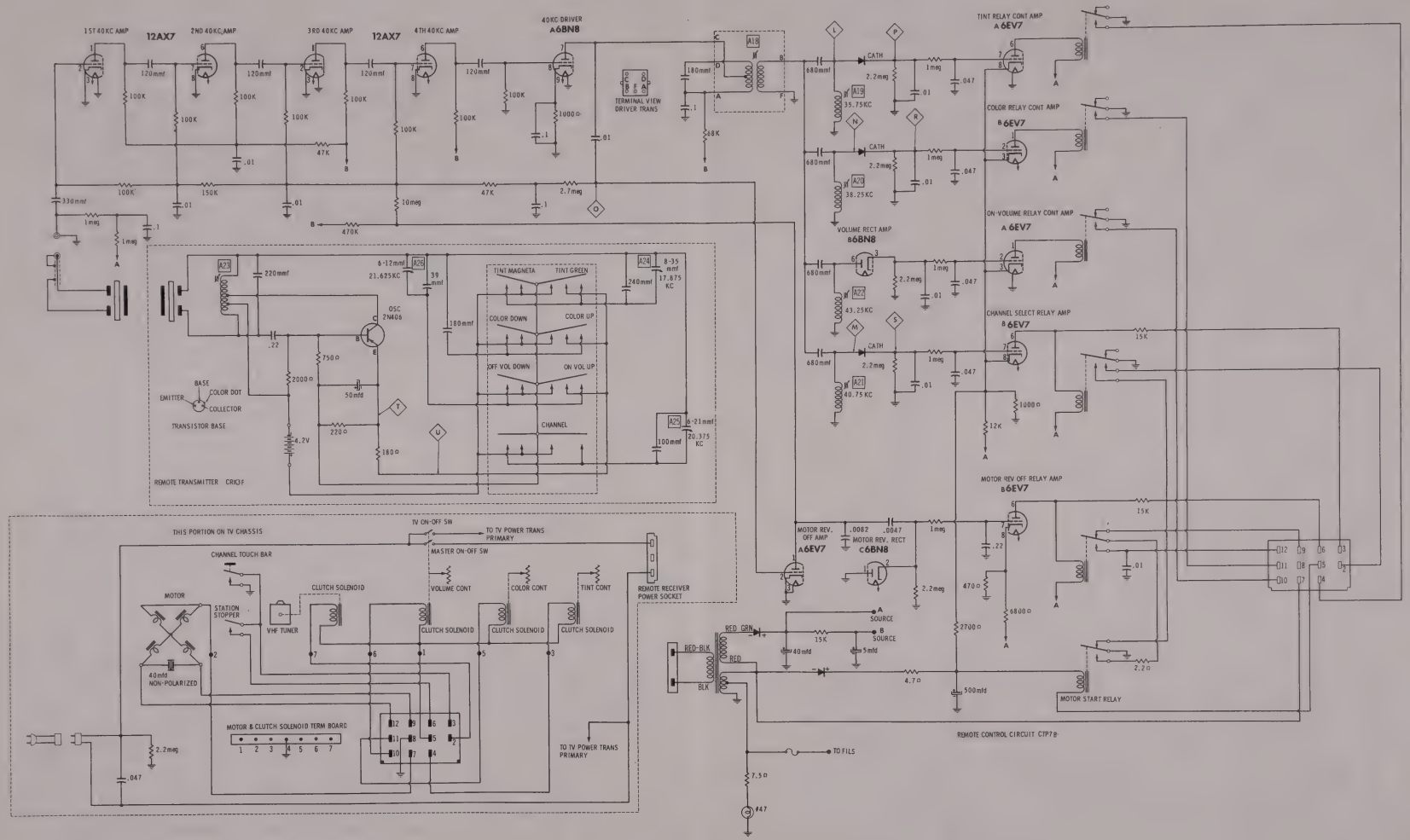
UHF TUNER KRK66AA, AB



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REMOTE CONTROL RECEIVER CTP7B, TRANSMITTER CRK3F

TUNER PARTS LIST AND DESCRIPTIONS

KRK98D

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	6CW4	V202	Mixer - Osc.	6EA8

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	27 5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C202	27 5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C203	27 5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C204	27 5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C205	27 10%		NPO-DI 25	TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C206	.033 200V		P288N-033	DD-303	CUB6S33	4DP-2-333	GEM-6133	6TM-S33
C207	.001		EF-001	MFT-1000		CCF-102	CT280A	
C208	27 10%		NPO-DI 27	TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C209	2-10	#109794		829-10				
C210	2.7 10%		NPO-SI 3.0		C10V3C			10TCC-V27
C211	8 NPO ±1mmf		NPO-DI 8.2		C10V82C			10TCC-V82
C212	47 10%	#109559						
C213	39 10%	#109558						
C214	.5mmf NPO		NPO-SI .5	TCZ-R5			CNO-550	
C215	33 N750 5%			DTN-33	C10Q33U	CCTN-330	CN7-433	10TCU-Q33
C216	68 N750 10%		N750-DI 68	DTN-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C217	10 N330 5%	#103556				*		10TCS-Q10
C218	10 N220 5%	#76350				*		10TCR-Q10
C219	.001		EF-001	MFT-1000		CCF-102	CT280A	
C220	.001		EF-001	MFT-1000		CCF-102	CT280A	
C221	.001		EF-001	MFT-1000		CCF-102	CT280A	
C222	680		DI-680	DD-681	BYA10T68	CCD-681	GP368	10TS-T68
C223	680		DI-680	DD-681	BYA10T68	CCD-681	GP368	10TS-T68
C224	.001		EF-001	MFT-1000		CCF-102	CT280A	

RCA Victor Part Number.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R201	4700Ω				R208	1000Ω			
R202	47K				R209	5600Ω			
R203	4.7meg				R210	8200Ω			
R204	2.2meg				R211	2200Ω			
R205	12K				R212	13K 4W	PW4-13K	4W-SQ-13K	
R206	1500Ω				R213	18K 2W			
R207	100K								

COILS (RF-IF)

ITEM No.	USE	RCA Victor PART No.	NOTES
L201	Ant. Matching	109364	Assembly
L202	Ant.	109565	Channel 2-13, Includes Wafer Assembly
L203	RF	109563	"
L204	Mixer Grid	109561	"

ITEM No.	USE	RCA Victor PART No.	NOTES
L205	Osc.	109367	Channel 2-13, Includes Wafer Assembly
L206	RF Choke		"
L207	Mixer Plate	107966	
L208	Fil. Choke		

REMOTE CONTROL RECEIVER

REMOTE CONTROL RECEIVER ALIGNMENT

Short points (L), (M), (N) and pin 6 (cathode) of Vol. Rect. Amp. to chassis with clip leads.
Suggested Alignment Tools: GENERAL CEMENT #8282, 8606, 8505L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

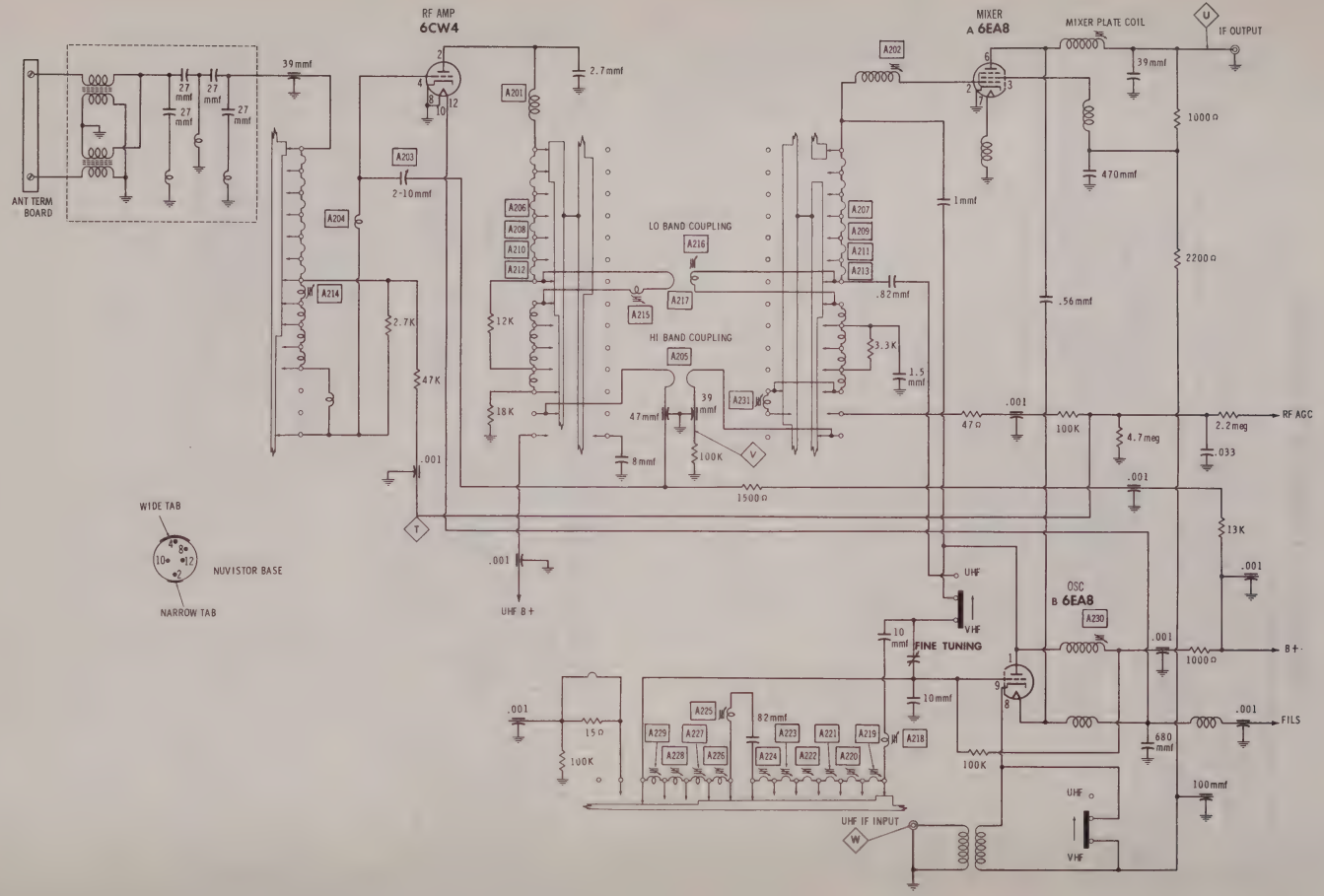
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CONNECT VTVM	ADJUST	REMARKS
1.	High side to microphone input. Low side to chassis.	40.75KC	DC probe thru 10meg to point (Q). Common to chassis.	A18	Adjust for maximum deflection. Then turn $\frac{1}{2}$ turn clockwise.
2.	"	35.75KC	DC probe thru 10meg to point (P). Common to chassis.	A19	Remove clip lead from points (L), (M), (N) and pin 6 of Vol. Rect. Amp. Adjust A19 for maximum deflection.
3.	"	38.25KC	DC probe thru 10meg to point (R). Common to chassis.	A20	Adjust for maximum deflection.
4.	"	40.75KC	DC probe thru 10meg to point (S). Common to chassis.	A21	"
5.	"	43.25KC	DC probe thru 10meg to pin 3 (Cath.) of Vol. Rect. Amp. Common to chassis.	A22	"

REMOTE CONTROL TRANSMITTER

REMOTE CONTROL TRANSMITTER ALIGNMENT

Remove the complete cover from the transmitter.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CONNECT SCOPE	ADJUST	REMARKS
6.	High side to horizontal input of scope. Low side to ground lug of scope.	19.125KC	Vert. Amp. probe about 1 inch in front of transducer opening at end of transmitter. Low side to negative terminal of battery.	A23	Depress right hand "Color" button and adjust A23 for zero beat on scope. Depress left hand "Color" button and check for blocking on scope pattern.
7.	"	17.875KC	"	A24	Depress right hand "Tint" button and adjust A24 for zero beat. Depress left hand "Tint" button and check for blocking on scope pattern.
8.	"	20.375KC	"	A25	Connect a clip lead from point (T) to point (U). Depress "Channel" button and adjust A25 for zero beat on scope. Remove jumper.
9.	"	21.625KC	"	A26	Depress right hand "On-Volume" button and adjust A26 for zero beat on scope. Depress left hand "Off-Volume" button and check for blocking.



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VHF TUNER WITH UHF PROVISIONS KRK99C, D, J, K

TUNER ALIGNMENT INSTRUCTIONS

UHF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.
Connect the negative lead of a 2.5 volt bias supply to point (T). Positive to chassis.
Connect a 1800 resistor across input cable of scope.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
23.	High side thru input lead (Fig. 203) to point (W). Low side to chassis.	45MC (10MC Swp.)	41.25MC 45.75MC	UHF Any	Vert. Amp. thru 330mmf to plate of Mixer. Low side to chassis.	A230, A231	Adjust for maximum gain and symmetry of response similar to Fig. 204 with markers as shown.
24.	Across UHF Antenna Terminals.	To center frequency of channel to be received. (See Chart)	"	Channel to be received	Scope across Video Det. Load	A230, A231	Retouch for response similar to Fig. 205.

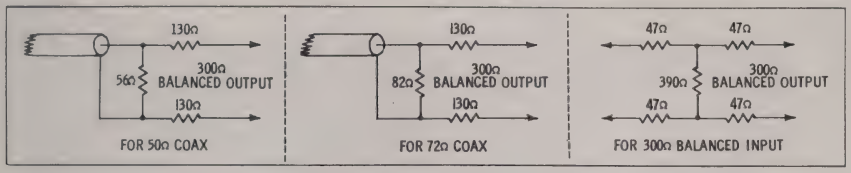


FIG. 201

FIG. 202

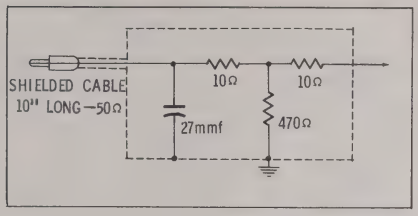


FIG. 203

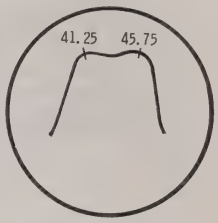


FIG. 204

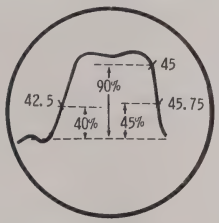
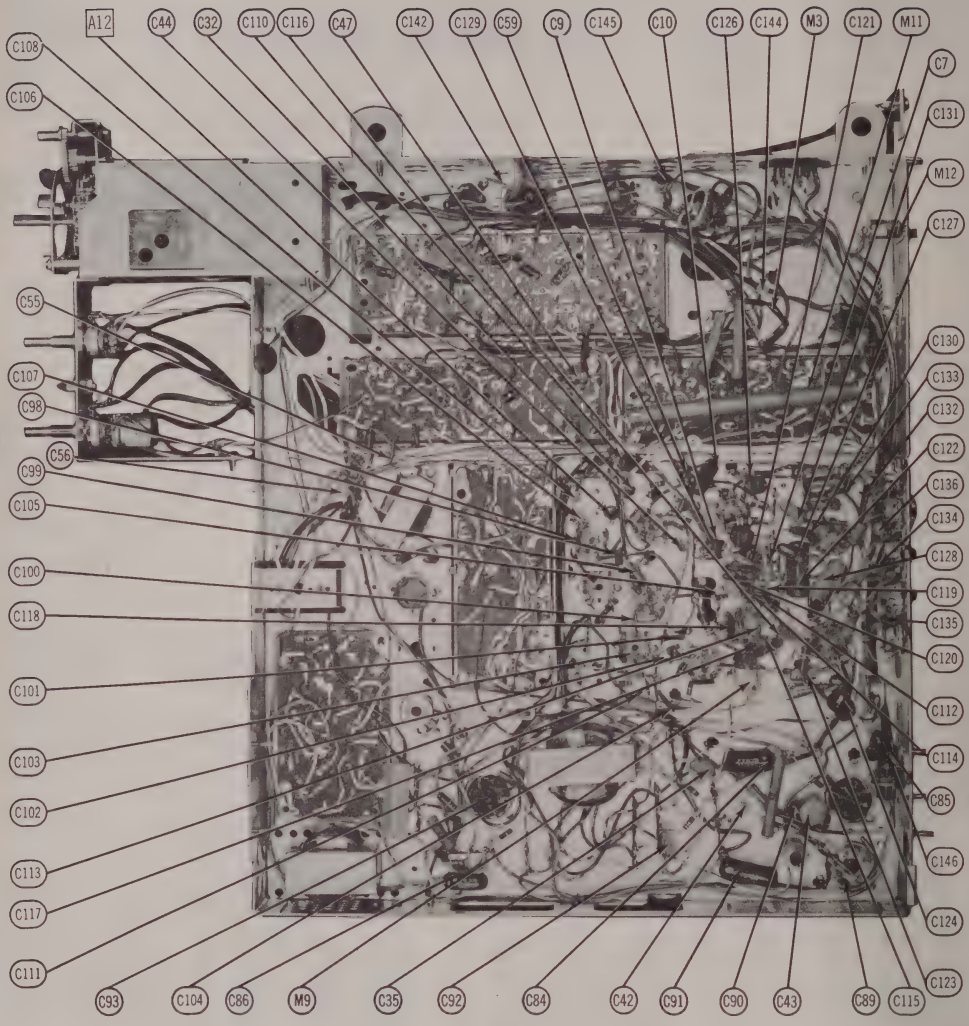


FIG. 205

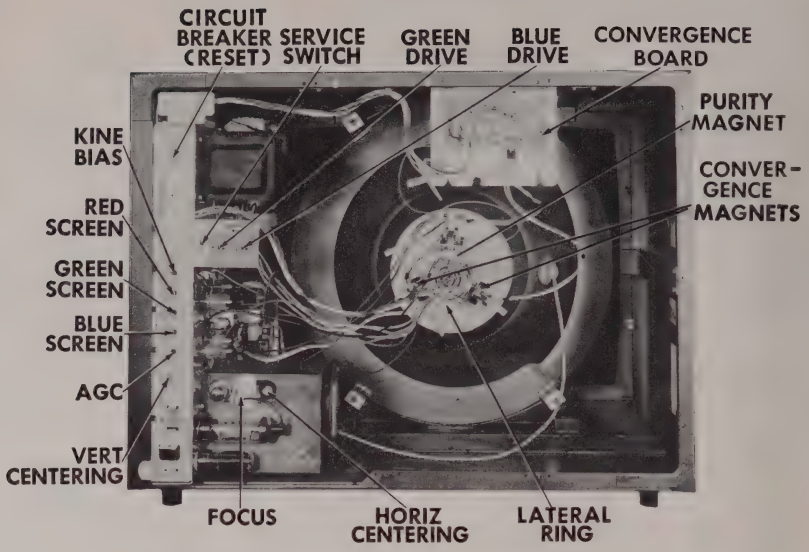
Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier
2	54-60	55.25	59.75	23	524-530	525.25	529.75	44	650-656	651.25	655.75	64	770-776	771.25	775.75
3	60-66	61.25	65.75	24	530-536	531.25	535.75	45	656-662	657.25	661.75	65	776-782	777.25	781.75
4	66-72	67.25	71.75	25	536-542	537.25	541.75	46	662-668	663.25	667.75	66	782-788	783.25	787.75
5	76-82	77.25	81.75	26	542-548	543.25	547.75	47	668-674	669.25	673.75	67	788-794	789.25	793.75
6	82-88	83.25	87.75	27	548-554	549.25	553.75	48	674-680	675.25	679.75	68	794-800	795.25	799.75
7	174-180	175.25	179.75	28	554-560	555.25	559.75	49	680-686	681.25	685.75	69	800-806	801.25	805.75
8	180-186	181.25	185.75	29	560-566	561.25	565.75	50	686-692	687.25	691.75	70	806-812	807.25	811.75
9	186-192	187.25	191.75	30	566-572	567.25	571.75	51	692-698	693.25	697.75	71	812-818	813.25	817.75
10	192-198	193.25	197.75	31	572-578	573.25	577.75	52	698-704	699.25	703.75	72	818-824	819.25	823.75
11	198-204	199.25	203.75	32	578-584	579.25	583.75	53	704-710	705.25	709.75	73	824-830	825.25	829.75
12	204-210	205.25	209.75	33	584-590	585.25	598.75	54	710-716	711.25	715.75	74	830-836	831.25	835.75
13	210-216	211.25	215.75	34	590-596	591.25	595.75	55	716-722	717.25	721.75	75	836-842	837.25	841.75
14	470-476	471.25	475.75	35	596-602	597.25	601.75	56	722-728	723.25	727.75	76	842-848	843.25	847.75
15	476-482	477.25	481.75	36	602-608	603.25	607.75	57	728-734	729.25	733.75	77	848-854	849.25	853.75
16	482-488	483.25	487.75	37	608-614	609.25	613.75	58	734-740	735.25	739.75	78	854-860	855.25	859.75
17	488-494	489.25	493.75	38	614-620	615.25	619.75	59	740-746	741.25	745.75	79	860-866	861.25	865.75
18	494-500	495.25	499.75	39	620-626	621.25	625.75	60	746-752	747.25	751.75	80	866-872	867.25	871.75
19	500-506	501.25	505.75	40	626-632	627.25	631.75	61	752-758	753.25	757.75	81	872-878	873.25	877.75
20	506-512	507.25	511.75	41	632-638	633.25	637.75	62	758-764	759.25	763.75	82	878-884	879.25	883.75
21	512-518	513.25	517.75	42	638-644	639.25	643.75	63	764-770	765.25	769.75	83	884-890	885.25	889.75
22	518-524	519.25	523.75	43	644-650	645.25	649.75								



CHASSIS BOTTOM VIEW
ALIGN., CAPACITOR, MISC. IDENT.

CHASSIS BOTTOM VIEW

RESISTOR, INDUCTOR, TRANSFORMER IDENT.

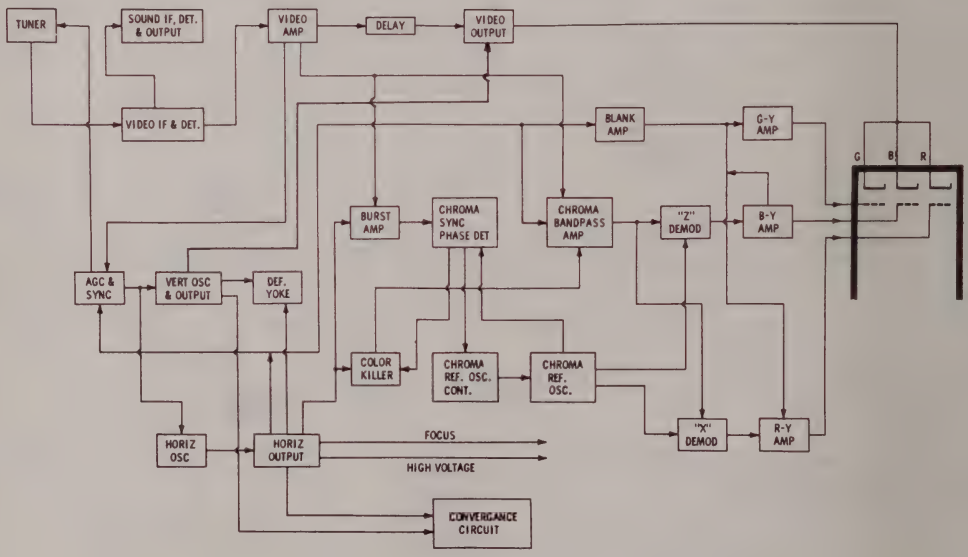


CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL MODEL 211CB412

1. Remove 9 push-on type knobs on front of set.
2. Remove 7 screws and 3 clamps on rear cover.
3. Remove rear cover.
4. Remove yoke leads, picture tube socket, high voltage lead, speaker leads, and plug from convergence chassis.
5. Remove 4 chassis bolts.
6. Remove screw holding control assembly, slide back and pull up.
7. Pull chassis straight out.



BLOCK DIAGRAM

PHOTOFACT® Folder

**PRODUCTION CHANGE
BULLETIN 269**

PRODUCTION CHANGE
BULLETIN 269

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 14 IN SET 463

Revere Models T-202, T-204 were covered in PHOTOFACT Folder 14 - Set 463.

Model T-204-4 is electrically and mechanically similar except for the following changes.

COMPONENT CHANGES

C5 is increased from .1mfd to .22mfd.

C7 is increased from 100mmf to 150mmf.

C8 is decreased from 1000mmf to 47mmf.

C11 is increased from 47mmf to 750mmf.

R7 is decreased from 2.2meg to 1.5meg.

C17 is decreased from 470mmf to 300mmf.

C18 is decreased from 50000mmf to 10000mmf.

C32 is increased from 100mmf to 220mmf.

C33 is increased from .1mfd to .22mfd.

C34 is decreased from 500mmf to 220mmf.

R44 is increased from 120K to 220K.

R45 is increased from 68K to 270K.

COMPONENTS ADDED

A Hum Balance Control (100Ω @ 2 watts) is added across R3. R5 is disconnected from ground. It now goes to ground through a 220Ω Resistor. The center arm of the Hum Balance Control connects to the junction of R5 and the added 220Ω Resistor through a 100K Resistor.

A 3300Ω Resistor is inserted between lug 4 of L1 and R35.

A Hum Balance Control (250Ω @ 2 watts) is added across R4. The center arm of the control is connected to the junction of R48 & R49 through a 2000mmf Capacitor.

A 22mmf Capacitor and a 560K Resistor in parallel are inserted between R34 and the junction of C27 and R33.

A 10mmf Capacitor and a NE-51 Pilot Lamp in series is inserted from Pin 4 of V4 (6K6GT) to ground. One side of the Pilot Lamp connects to ground.

The Operating Instructions and the Electrical Instructions are given in this bulletin.

REVERE MODEL T-204-4

(Continued On The Reverse Side)

PRODUCTION CHANGE
BULLETIN 269

SET 550 FOLDER 3

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

To Make and Play Back a Monaural Two (or Twin) - Track Recording

The material for a monaural recording may be supplied from a microphone, a radio or television, a phonograph, an external amplifier, etc. Regardless of the source of material, it must be fed by the proper input plug into the Input jack at the rear of the recorder.

1. To record:

   a. Press the Stop key and thread the recorder. Turn the head track selector knob to the 2-Track position. This action moves the heads to the correct position with respect to the tape.

   b. Turn the tape speed selector knob to the desired tape speed, either 3 3/4 or 7 1/2 ips.

   c. Turn the tone control to Treble.

   d. Insert the input signal into the Input jack at the rear of the recorder.

   e. Adjust Volume control so that the Normal half of the record level indicator flashes, and no flashing occurs at the Distorted half.

   f. Push the Record Key Lock lever and depress the Record key.

   g. Release the Instant Stop lever, and the recording will start.

   h. After the recording of the first track is completed and tape runs out, press the Stop key.

   i. To record the second track, remove the empty supply reel from the left spindle. Take the full reel of tape from the right spindle, turn it over, place it on the left spindle, and rethread the machine.

   j. Record the second track in the same manner as the first track.

2. To play back:

   a. With the Stop key depressed, place the recorded reel of tape on the left spindle and thread the machine. Make sure that the head track selector knob is turned to the 2-Track position.

   b. Press the Play and Speaker key. Adjust the Volume and Tone controls for the desired listening pleasure.

   c. After the playback of one track is completed and tape runs out, press the Stop key.

   d. To play back the other track, remove the empty supply reel from the left spindle. Take the full reel of tape from the right spindle, turn it over, place it on the left spindle, and rethread the tape.

   e. Press the Play and Speaker key and play back the other track.

To Record or Play Four Separate Monaural Tracks

The basic operations for the record and playback of 4-track monaural tapes are the same as the record and playback of monaural 2- (or twin) track tapes. However, for the record or playback of 4-track monaural tapes, the head track selector knob must be turned to positions A and B. To record or play 4 separate monaural tracks, proceed as follows:

1. Arbitrarily designate by a label or some other means, "Side 1" to one of the sides of both the supply and take-up reels. Designate "Side 2" to the other side of both the supply and take-up reels. Place both the supply and take-up reels on their respective spindles with "Side 1" up. Thread the machine.
2. Place the head track selector knob in the "A" position. This action moves the heads to the correct position with respect to the tape.
3. To record or play track No. 1 on "Side 1" press the desired function key.
4. At the end of the reel, take the full reel from the right spindle, turn it over to "Side 2", and place it on the left spindle. Place empty take-up reel on right spindle with "Side 2" up. Thread the machine.
5. To record or play track No. 2 on "Side 2", press the desired function key.
6. At the end of the reel, turn the head track selector knob to the "B" position. This action moves the heads to the correct position with respect to the tape.
7. Take the full reel from the right spindle, turn it over to "Side 1", and place it on the left spindle. Place empty take-up reel on right spindle with "Side 1" up. Thread the machine.
8. To record or play track No. 3 on "Side 1", press the desired function key.
9. At the end of the reel, take the full reel from the right spindle, turn it over to "Side 2", and place it on the left spindle. Place empty take-up reel on right spindle with "Side 2" up. Thread the machine.
10. To record or play track No. 4 on "Side 2", press the desired function key. This completes the record or playback of 4 separate monaural tracks.

To Play Stereo Two-Track Tapes

Stereo 2-track tapes contain one full length recording on the dull side of the tape. Play a stereo 2-track tape as follows:

1. Place the full reel of tape on the left spindle and thread the machine.
2. Place the speed selector knob in the 7 1/2 ips position.
3. Turn the head track selector knob to the "2-Track" position. This action moves the heads to the correct position with respect to the tape.

4. Connect the Stereo Preamp jack at the rear of the recorder to an external amplifier and speaker system. Place the speaker at least 7 feet to the right of the recorder.

5. Press the Play key, and play the tape through in one direction only.

6. The upper stereo channel or track is played back through the tape recorder and its self-contained speaker (left speaker). The lower stereo channel or track is played back through the external amplifier and speaker system (right speaker).

7. In a Hi-Fi hook-up, it may be desired to play back the upper stereo channel through an auxiliary amplifier and speaker system to more closely match the playback of the lower stereo channel. To do this, connect an auxiliary amplifier and speaker system to the Preamp Output jack. Set the recorder's Tone control to "Hi-Fi" position and adjust the recorder's Volume control until the Normal half of the record level indicator flashes. Thereafter, adjust the volume and tone controls on the auxiliary amplifier for the desired listening pleasure. For best stereo reproduction, the right and left speakers should be identical units, of good quality, and at least 7 feet apart.

To Play Stereo Four-Track Tapes

Stereo 4-track tapes contain two full length recordings (an upper and lower track for each recording) on the dull side of the tape. The procedure for playing 4-track stereo is essentially the same as for playing 2-track stereo. Play 4-track stereo in the following manner:

1. Place the full reel of tape on the left spindle and thread the machine.

2. Place the speed selector knob in the 7 1/2 ips position.

3. Turn the head track selector knob to the "A" position. This action moves the heads to the correct position with respect to the tape.

4. Follow the instructions as described in Step 4 under "To Play Stereo Two-Track Tapes".

5. Press the Play key and play one full length recording through the recorder.

6. Refer to Steps 6 and 7 under "To Play Stereo Two-Track Tapes".

7. At the end of the reel, take the full reel from the right spindle, turn it over, and place it on the left spindle. Place empty take-up reel on right spindle and rethread the machine.

8. Leave the head track selector knob in position "A". Press the Play key and play the second full length recording through the recorder. Refer to Steps 6 and 7 under "To Play Stereo Two-Track Tapes".

Erasing Tape

Whenever a monaural recording is made, any prerecorded material on the tape is automatically erased before the new material is recorded. Erasure is accomplished only when the recorder is in the Record function. In Model T-204-4 the erase head erases only 1/4 of the tape each time the tape passes the head. To erase the tape without recording new sound, turn the Volume control down and press the Record key.

Public Address System

The recorder may be used as a public address system when the recorder is placed in the Stop function. Set the slide switch at the rear of the recorder to the P.A./Monitor position and feed the signal from an external source such as a microphone, radio, AM-FM tuner, phonograph, etc., into the Input jack. The tone control is fully effective in the P.A. function.

NOTE: For best results plug an external auditorium speaker into the External Speaker jack. Keep the distance between the microphone and speaker as far as possible to prevent feedback and howling.

ELECTRICAL ADJUSTMENTS

Head Adjustments

A. To adjust head height:

1. Thread the recorder with tape.

2. Turn the head track selector knob to "A" position (furthest position up). Remove knob.

3. Press Play key. Place finger on roll pin in record pressure pad and pull back pressure pads. Tape should move smoothly past the heads.

4. Use a #2 Bristol wrench and adjust the record head height through the head height adjusting hole (see Fig. 9). Adjustment screw is 3/4" below hole.

5. Adjust record head height until top of upper element is exactly even with the tape as shown in Fig. 10.

6. To adjust the erase head height, turn its mounting nut (173, see Fig. 9) until the top edge of the upper erase element is even with the top edge of the tape (see Fig. 10).

B. To adjust record head azimuth:

An alignment tape, which can be obtained from Ampex or the larger radio supply houses, should be used to best align the head. The tape should have a full track recording at a frequency higher than 6,000 caps. Adjust head azimuth as follows:

1. Thread the recorder with tape.

2. Turn the head track selector knob to the 2-Track position.

3. Press Play key and adjust the record head azimuth nut (173, see Fig. 9) for maximum output.

4. In lieu of the alignment tape, play a commercial prerecorded 4-track tape and adjust the head for maximum treble tone.

5. After adjusting the azimuth, check to see that the head height has not been disturbed. Use "Locktite" cement on the adjustment nuts.

C. Using magnetic particles to locate tracks:

If there is doubt about the head adjustments, it can best be checked with magnetic powder dispersal, such as the Magna-See Kit manufactured by Reeves Soundcraft, Danbuty, Connecticut. The procedure is as follows:

1. Set head track selector knob to "A" position.

2. Make a constant tone recording (any frequency on a previously recorded full or half-track tape).

3. Submerge a small section of the tape as described in the Magna-See Kit instructions. The pattern should appear as shown in Fig. 11. Inexpensive pocket microscopes calibrated in thousandths of an inch can be used to measure the track width.

Bias Current Adjustment

Make the bias current adjustment as follows:

1. Remove bottom cover from recorder as per "Disassembly Instructions".

2. Unplug 4-prong head plug. Wrap a length of bare hook-up wire around pin #2 of head plug, and reinsert plug into head socket.

3. Upon reinsertion of the head plug into its socket, check to see that the bare wire connected to pin #2 does not touch the chassis or any of the other plug pins.

4. Connect a VTVM (Capable of accurately measuring voltage at 100 kc between the bare wire (pin #2) and chassis ground.

5. Engage the Record function of the recorder.

6. Adjust bias/erase oscillator coil (L2) core until VTVM reads: 40VAC (Model T-204-4), 50VAC (Model T-202, 80VAC (Model T-204).

Hum Adjustments (Models T-202, T-204, T-204-4)

1. Remove bottom grill cover, and set recorder so tubes are visible.

2. Apply AC power to recorder. Press the Speaker key, turn Volume control to maximum and Tone control to full treble. Adjust Hum Balance control R2 for minimum hum from speaker.

3. Depress Play key and adjust R53 and/or R3 for minimum hum from recorder speaker.

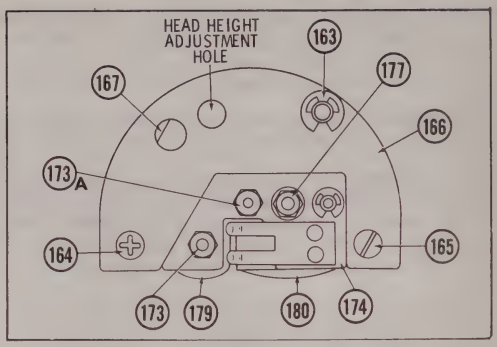


FIG. 9. 4-TRACK HEAD ASSEMBLY.

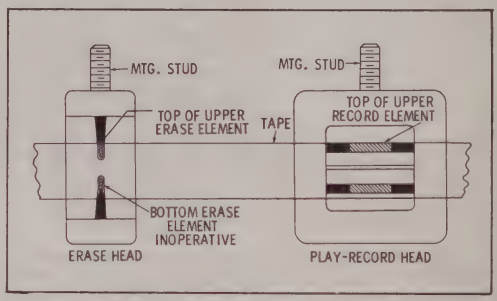


FIG. 10. HEAD HEIGHT LOCATION.

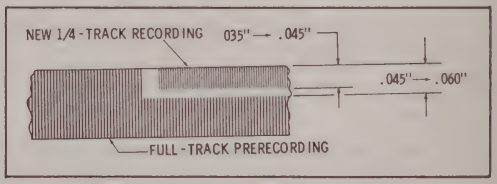


FIG. 11. MAGNETIC DISPERSAL PATTERN.

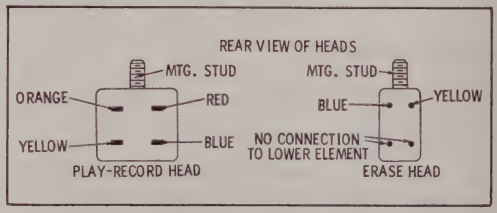
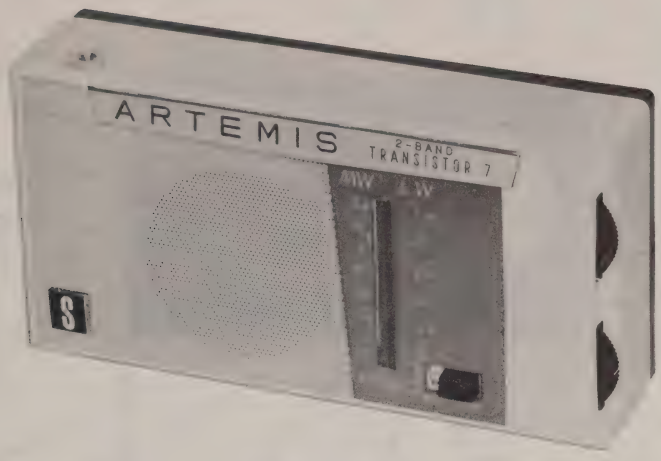


FIG. 12. HEAD WIRE COLOR CODING (MODEL T-204-4).

4. (Model T-204, T-204-4 only.) Connect stereo output to input of auxiliary amplifier and speaker system. With recorder in Play position, adjust R51 and/or R4 for minimum hum using auxiliary speaker as output indicator.

PHOTOFACT® Folder with CIRCUITRACE®

ARTEMIS
MODEL ST-7EL



TRADE NAME	Artemis Model ST-7EL
SUPPLIER	O. B. Warnock, Box 196, Nampa, Idaho
TYPE SET	Battery Operated Transistorized Portable BC-LW Receiver
POWER SUPPLY	6 Volts DC RATING 12MA @ 6 Volts DC (No Signal, Min. Volume) 20MA @ 6 Volts DC (Signal, Normal Volume)
TUNING RANGE—BROADCAST	535 — 1605KC LONG WAVE 175 — 400KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3.....GENERAL CEMENT #8607, 9291, 9294
WALSCO #2520, 2522, 2523, 2524, 2534, 2537
A4, A6, A7, A9.. GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A5, A8.....GENERAL CEMENT #8282, 8606, 8606-L, 9091
WALSCO #2526, 2541, 2542, 2543, 2544

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400% Mod.)	(MW) Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1600KC	1600KC	"	A4	"
3.	"	600KC	600KC	"	A5	"
4.	"	1400KC	1400KC Signal.	"	A6	"
5.	"	400KC	(LW) 400KC	"	A7	"
6.	"	175KC	175KC	"	A8	"
7.	"	300KC	300KC Signal.	"	A9	Adjust for maximum output. Repeat Steps 2 thru 7.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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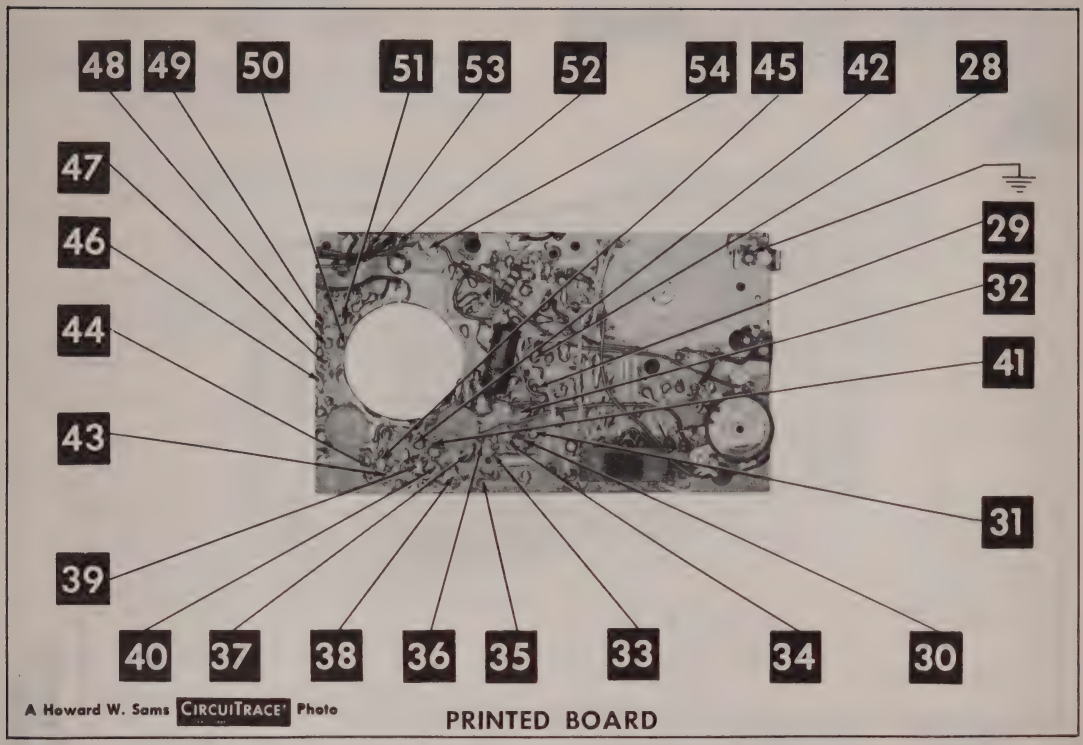
ARTEMIS
MODEL ST-7EL
ARTEMIS
MODEL ST-7EL
SET 550 FOLDER 4



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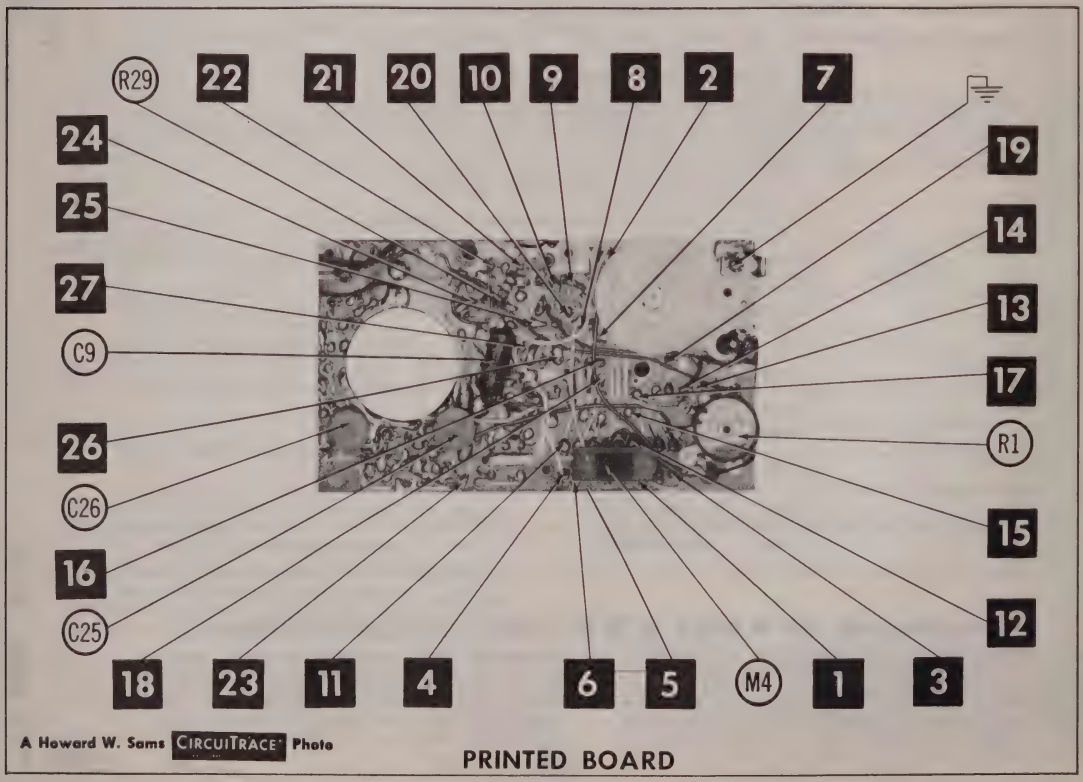

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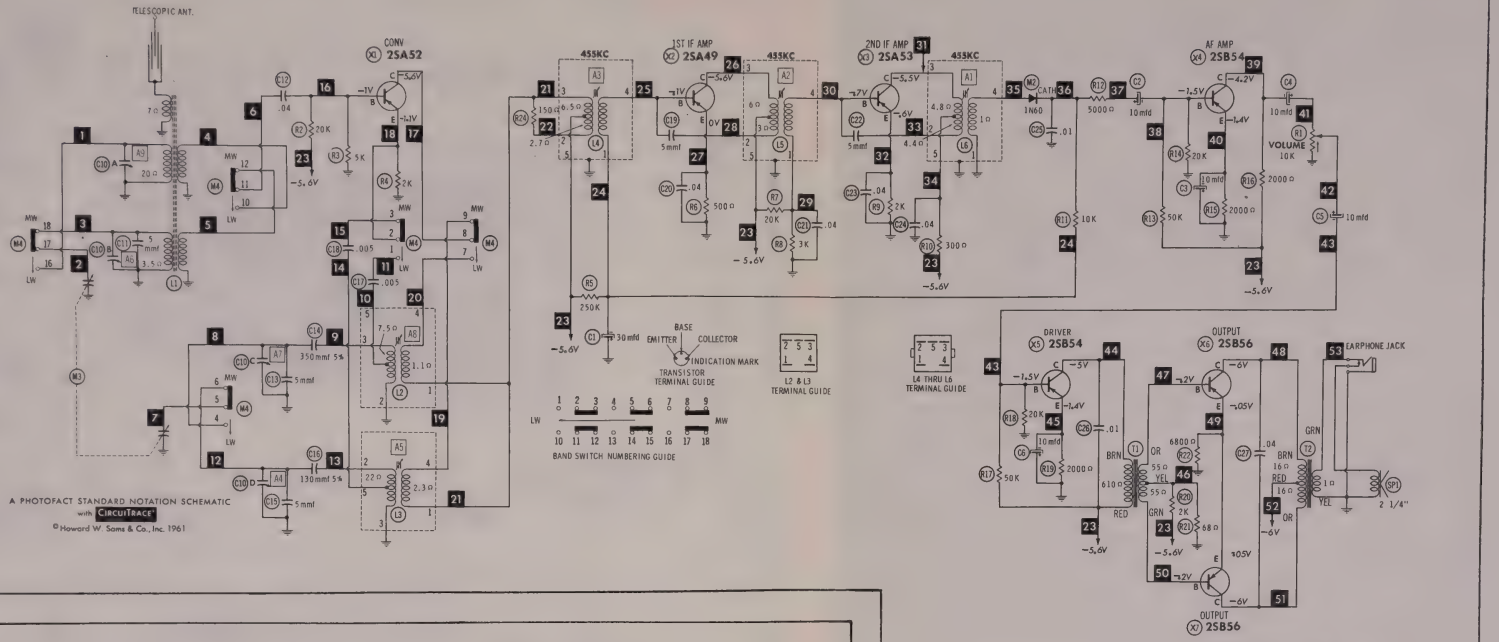
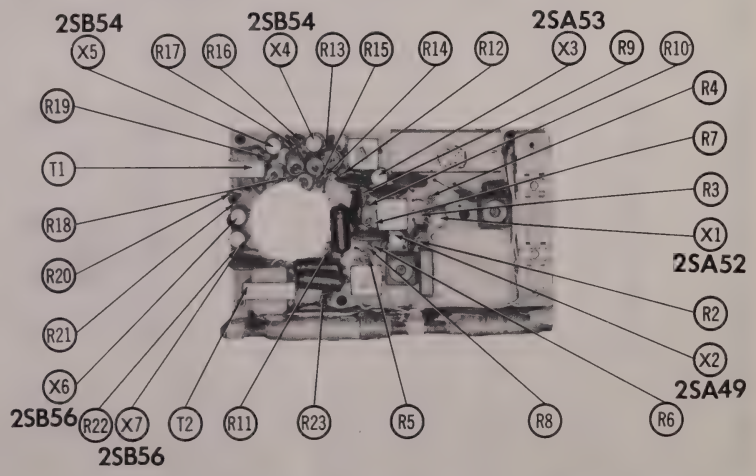
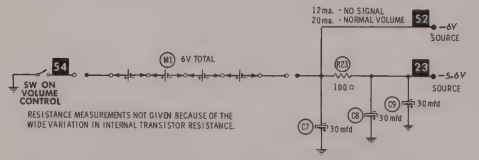




CHASSIS TOP VIEW — RESISTOR & TRANSISTOR IDENT.


12ma. - NO SIGNAL
20ma. - NORMAL VOLUME
-6V SOURCE
-5.6V SOURCE
6V TOTAL
SW ON VOLUME CONTROL
RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

ARTEMIS
MODEL ST-7EL

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2SA52	Converter				PNP
X2	2SA49	1st IF Amplifier				PNP
X3	2SA53	2nd IF Amplifier				PNP
X4	2SB54	AF Amplifier	2N406			PNP
X5	2SB54	Driver	2N406			PNP
X6	2SB56	Output	2N408			PNP
X7	2SB56	Output	2N408			PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	ARTEMIS PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	30	6		PTT27	NLW30-6	TT6X30	MLV30-6	TE-1092	
C2	10	10		PTT39	NLW10-10	TT12X10	MLV10-10	TE-1114	
C3	10	10		PTT39	NLW10-10	TT12X10	MLV10-10	TE-1114	
C4	10	10		PTT39	NLW10-10	TT12X10	MLV10-10	TE-1114	
C5	10	10		PTT39	NLW10-10	TT12X10	MLV10-10	TE-1114	
C6	10	10		PTT39	NLW10-10	TT12X10	MLV10-10	TE-1114	
C7	30	6		PTT27	NLW30-6	TT6X30	MLV30-6	TE-1092	
C8	30	6		PTT27	NLW30-6	TT6X30	MLV30-6	TE-1092	
C9	30	6		PTT27	NLW30-6	TT6X30	MLV30-6	TE-1092	

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10A								
B								
C								
D								
C11	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C12	.04							
C13	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C14	350 5%		1469-00035		5R5T36	CM-19B-361J		MS-336
C15	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C16	130 5%		1469-00013	TCZ-130	22R5T13	CM-19B-131J		MS-412
C17	.005		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C18	.005		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-050
C19	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C20	.04							
C21	.04							
C22	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C23	.04							

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C24	.04							
C25	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C26	.01		C80V103AM	DM-103	H-05S1	CCD-103	TA-110	TG-S10
C27	.04							

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ARTEMIS PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	10K	1/4		B16-216				Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	20K				R14	20K			
R3	5000Ω				R15	2000Ω			
R4	2000Ω				R16	2000Ω			
R5	250K				R17	50K			
R6	500Ω				R18	20K			
R7	20K				R19	2000Ω			
R8	3000Ω				R20	2000Ω			
R9	2000Ω				R21	68Ω			
R10	300Ω				R22	6800Ω			
R11	10K				R23	100Ω			
R12	5000Ω				R24	150K			
R13	50K								

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		ARTEMIS PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1A	BC Loopstick						
B	LW Loopstick						
L2	BC Osc.						
L3	LW Osc.						
L4	1st IF						
L5	2nd IF						
L6	3rd IF						

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	ARTEMIS PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	5	1	T103					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	ARTEMIS PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	300Ω CT	6-8Ω	T203					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ARTEMIS PART No.	QUAM PART No.	
SP1	2 1/4"	PM	6-8Ω			

BATTERIES

ITEM No.	VOLTAGE	ARTEMIS PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.5V	UM-3A		930		1015		M-15R	4 Required

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		ARTEMIS PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N60			1N60	1N60	Detector (Pigtail)

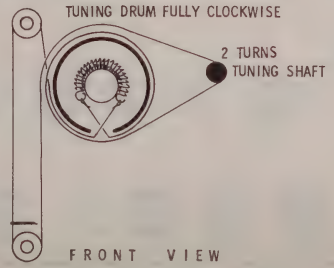
MISCELLANEOUS

ITEM No.	PART NAME	ARTEMIS PART No.	NOTES
M3 M4	Tuning Cap, Switch		2 Gang Band Selector (Slider Type)

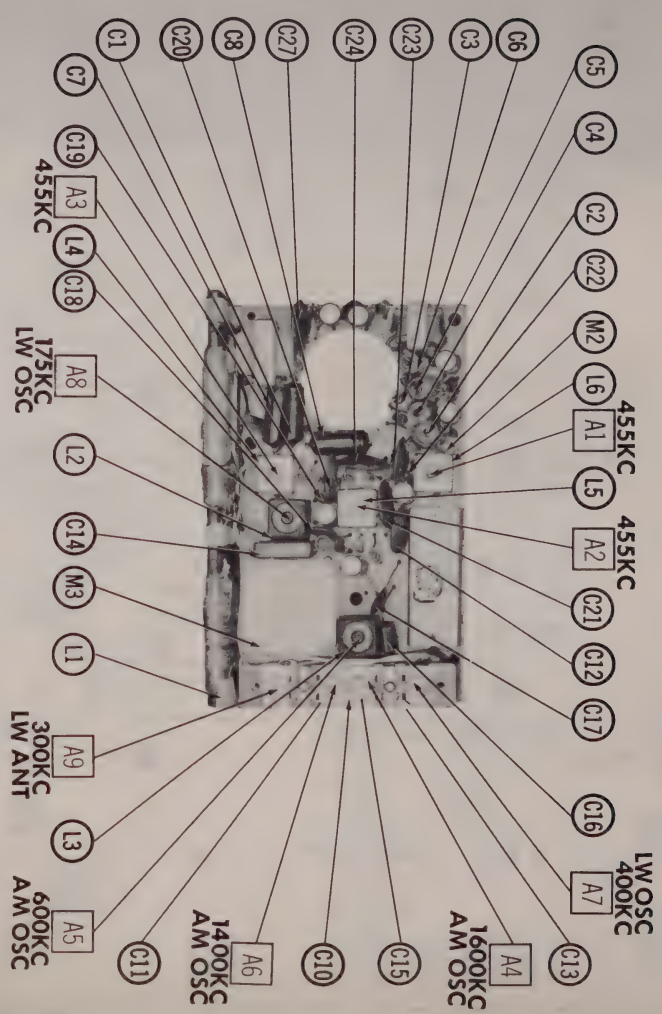
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

DRIVE CORD STRINGING



CHASSIS—TOP VIEW



PHOTOFACT® Folder with CIRCUITRACE®

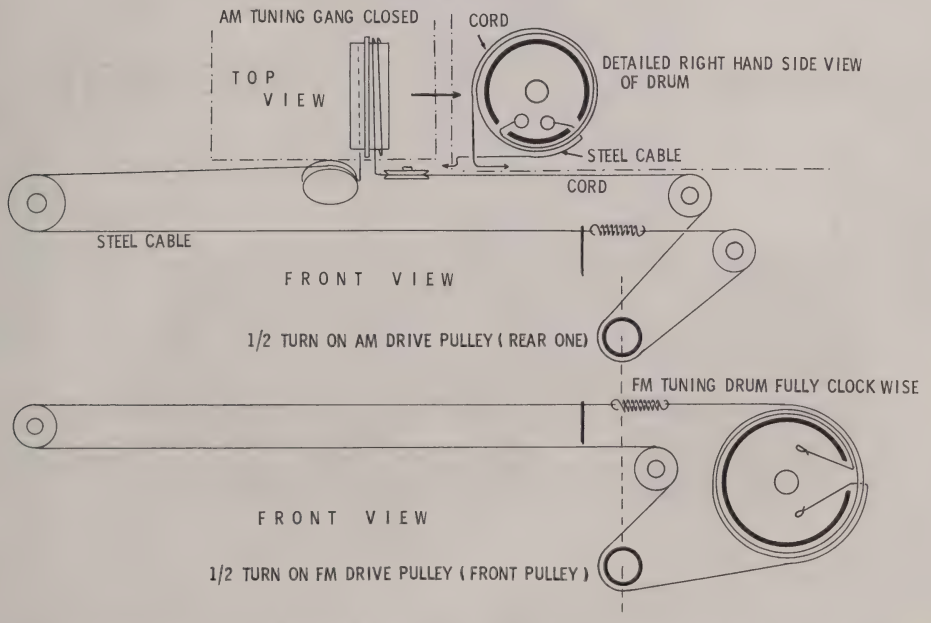
BLAUPUNKT MODELS GRANADA 2628, SULTAN 2623

BLAUPUNKT MODELS
GRANADA 2628, SULTAN 2623

MODEL SULTAN 2623

TRADE NAME	Blaupunkt Models GRANADA 2628, SULTAN 2623
IMPORTER	N. Pickens Inport Co., 64-01 Woodside Ave., Woodside 77, N. Y.
TYPE SET	AC Operated 6 Tube FM-BC-SW Receiver
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 52 Watts, .5 Amp. @117 Volts AC
TUNING RANGES	BROADCAST 515-1620KC FREQ. MOD. 88 — 108MC SHORT WAVE 5.95 — 18.2MC

DIAL CORD STRINGING


AM TUNING GANG CLOSED
CORD
TOP VIEW
DETAILED RIGHT HAND SIDE VIEW OF DRUM
STEEL CABLE
CORD
STEEL CABLE
FRONT VIEW
1/2 TURN ON AM DRIVE PULLEY (REAR ONE)
FM TUNING DRUM FULLY CLOCK WISE
FRONT VIEW
1/2 TURN ON FM DRIVE PULLEY (FRONT PULLEY)

BLAUPUNKT MODELS
GRANADA 2628, SULTAN 2623

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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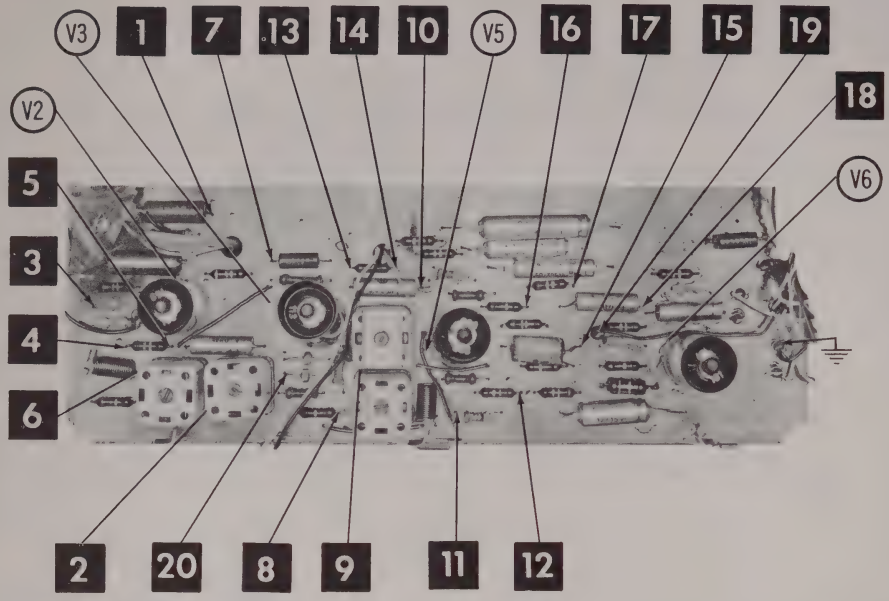
KK701

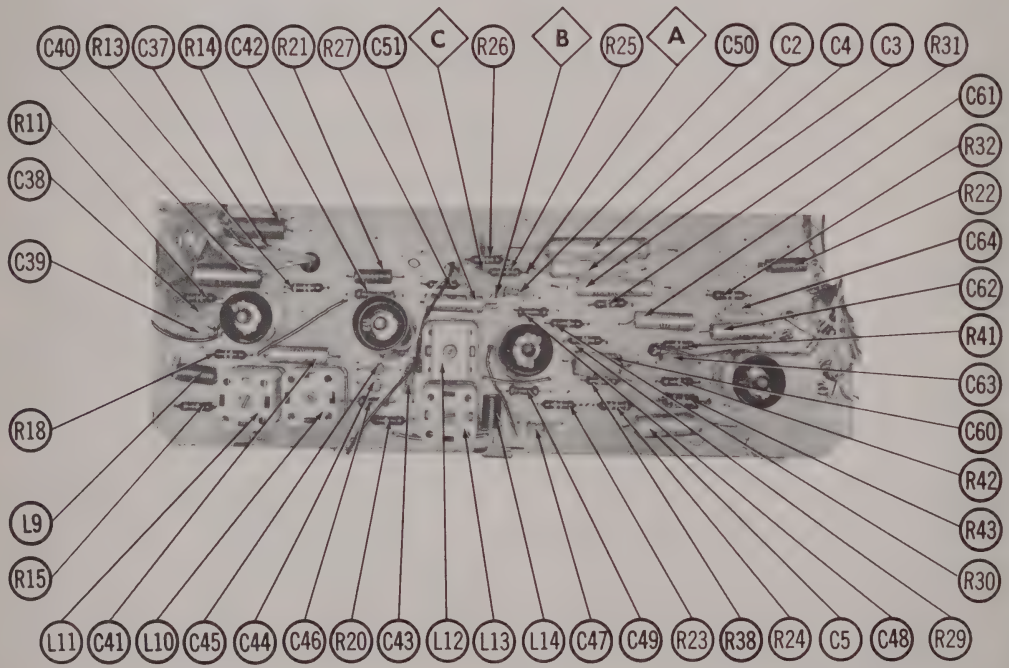
SET 550 FOLDER 5



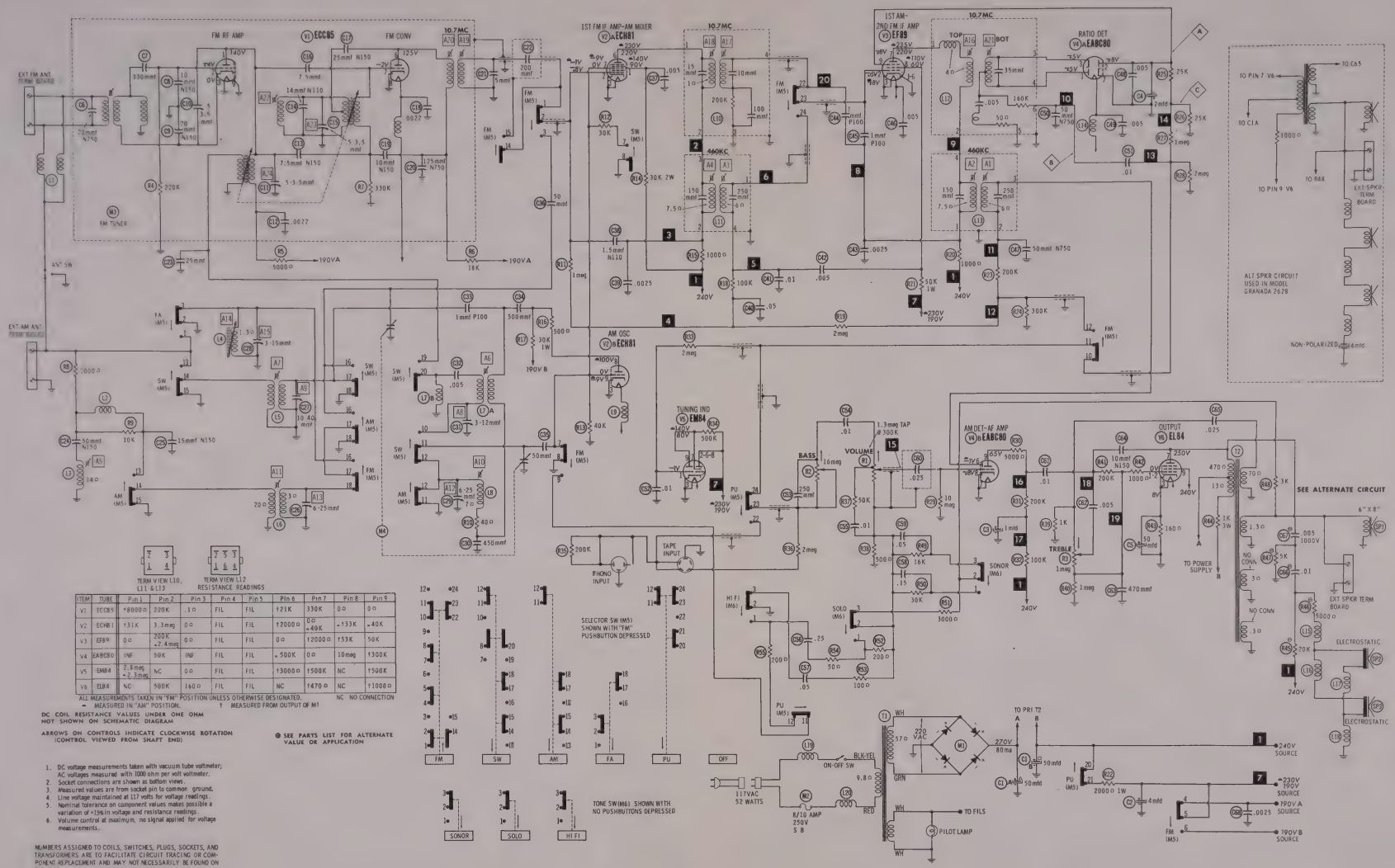
A Howard W. Sams CIRCUITRACE® Photo

PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



PRINTED BOARD



TERM VIEW L10, L11 & L13

TERM VIEW L12

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC85	*8000Ω	220K	.1Ω	FIL	FIL	†21K	330K	0Ω	0Ω
V2	ECH81	†31K	3.3meg	0Ω	FIL	FIL	†2000Ω	0Ω ◄49K	◄33K	◄40K
V3	EF89	0Ω	200K ◄2.4meg	0Ω	FIL	FIL	0Ω	†2000Ω	†53K	50K
V4	EABC80	INF	50K	INF	FIL	FIL	◄500K	0Ω	10meg	†300K
V5	EM84	2.8meg ◄2.3meg	NC	0Ω	FIL	FIL	†3000Ω	†500K	NC	†500K
V6	EL84	NC	500K	160Ω	FIL	FIL	NC	†470Ω	NC	†1000Ω

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
* MEASURED IN "AM" POSITION. † MEASURED FROM OUTPUT OF M1
NC NO CONNECTION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

⊛ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±5% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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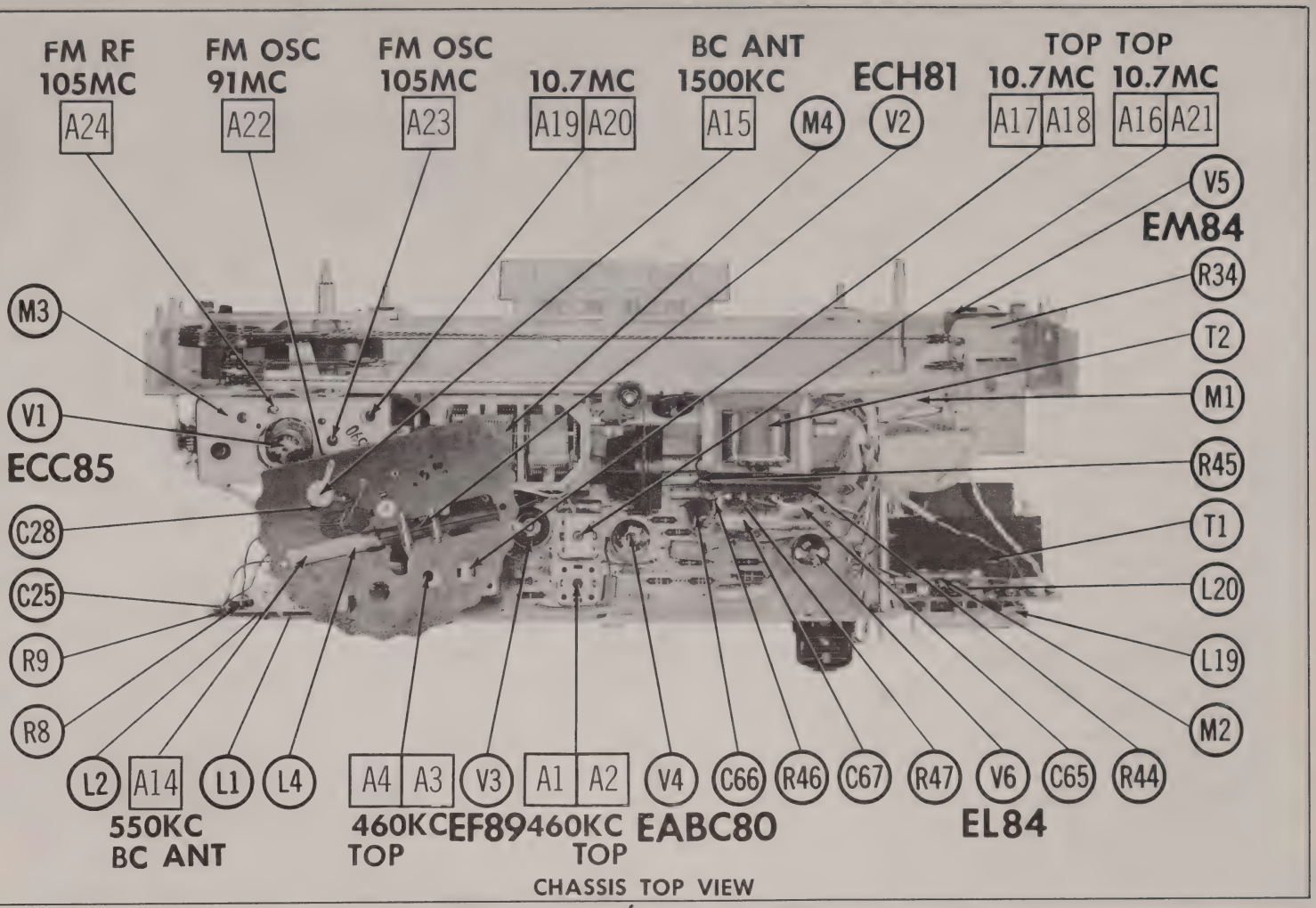
BLAUPUNKT MODELS GRANADA 2628, SULTAN 2623



CHASSIS TOP VIEW

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.
Set Bandspread to "O".
Suggested Alignment Tools:

A1 thru A4	GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291 WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538
A5, A6, A7, A10, A11, A19, A20	GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989 WALSCO #2515, 2531, 2532
A8, A9, A12, A13, A15	GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089 WALSCO #2512, 2525, 2528
A16, A17, A18, A21, A22	GENERAL CEMENT #9440
A23 and A24	GENERAL CEMENT #5003, 8271, 8275, 8276, 8609, 8721, 8722, 9150, 9298 WALSCO #2516, 2518, 2519

AM ALIGNMENT —SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 2 (grid) of AM Mixer. Low side to chassis.	460KC (400~ 30% AM)	(AM) Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	High side thru 470Ω to AM antenna socket. Low side to chassis.	"	"	"	A5	Adjust for MINIMUM output.
3.	"	6.25MC	(SW) 6.25MC	"	A6, A7	Adjust for maximum output.
4.	"	18MC	18MC	"	A8, A9	"
5.	"	550KC	(AM) 550KC	"	A10, A11	"
6.	"	1500KC	1500KC	"	A12, A13	"
7.	Loop	550KC	550KC	"	A14	Press FA button. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output by sliding coil along core.
8.	"	1500KC	1500KC	"	A15	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	High side thru 5mmf to pin 7 (grid) of FM Converter. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point Ⓐ. Common to chassis.	A16, A17, A18, A19, A20	Adjust for maximum deflection.
10.	"	"	"	DC probe to point Ⓑ. Common to point Ⓒ.	A21	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE — SELECTOR IN FM POSITION

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
9.	High side thru 5mmf to pin 7 (grid) of FM Converter. Low side to chassis.	10.7MC (450KC Swp.)	(FM) Point of non-interference.	Vert. amp. to point Ⓐ. Low side to chassis.	A16, A17, A18, A19, A20	Disconnect stabilizing capacitor C4. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C4.
10.	"	"	"	Vert. amp. to point Ⓑ. Low side to chassis.	A21	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A16 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
11.	Across FM antenna terminals with 150Ω in each lead.	91MC (Unmod.)	(FM) 91MC	DC probe to point Ⓐ. Common to chassis.	A22	Adjust for maximum deflection.
12.	"	105MC	105MC	"	A23, A24	"

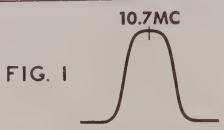


FIG. 1

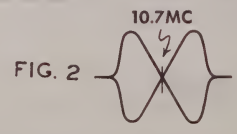
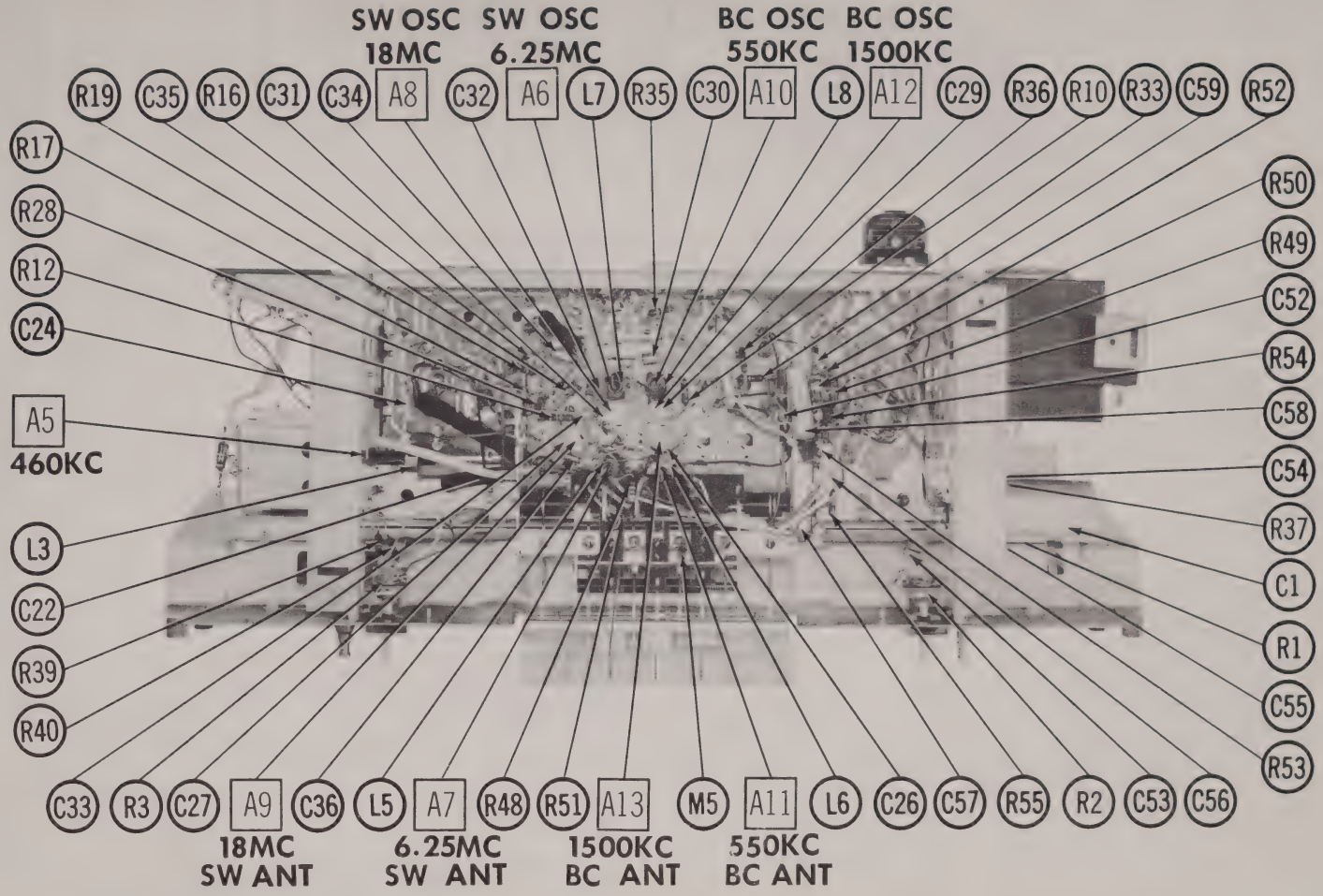
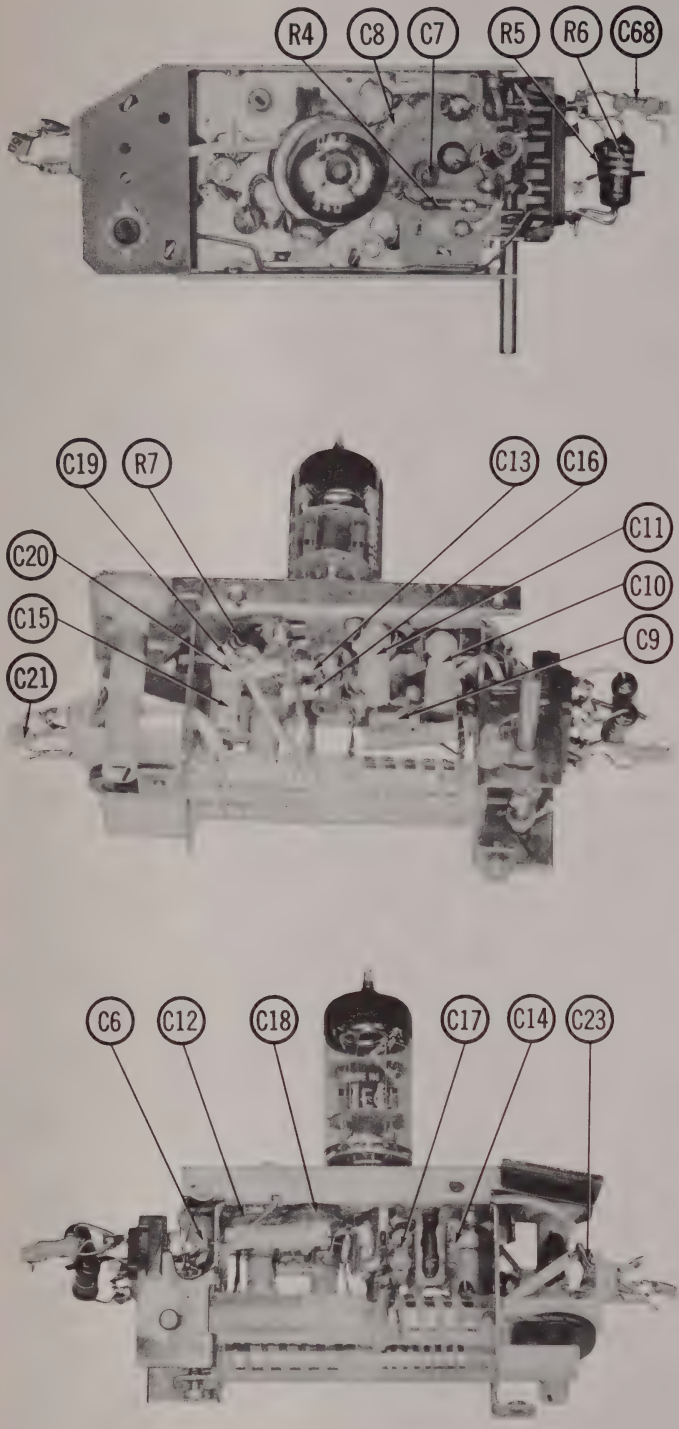


FIG. 2



CHASSIS BOTTOM VIEW



FM RF SUBCHASSIS

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	FM RF Amp. -FM Conv.	ECC85	V4	Ratio Detector-AM Det. -AF Amp.	EABC80
V2	1st FM IF Amp. -AM Mixer-AM Osc.	ECH81	V5	Tuning Indicator	EM84
V3	2nd FM-AM IF Amp.	EF89	V6	Output	EL84

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA BLAUPUNKT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲50	350		AFH1-41	A0390	FP137	TMS-1630	TVL-1622	
B	■50	350		PRS1680	BR5035	TC79	TD-50-450	TVA-1713	
C2	4	350		PRS1600	BR435	TC697	TD-4-450	TVA-1601	
C3	1	350		PRS1700	BR145	TC595	TD-2-450	TVA-1700	
C4	2	30		PTT88	NLW2-50	TC302	MLV2-50	TE-1301	
C5	50	12		PTT59	NLW50-15	TT15X50	MLV50-12	TE-1133	

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	20 N750		N750-DI 20	DTN-20	C10Q2U	CCTN-220	CN7-420	10TCU-Q20
C7	330		DI-330	DD-331	L10T33	CCD-331	B-333	10TS-T33
C8	10 N150					*		10TCP-Q10
C9	20 N150					*		10TCP-Q20
C10	.5-3.5							
C11	.5-3.5							
C12	.0022		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C13	7.5 N150					*		
C14	14 N110					*		
C15	.5-3.5							
C16	7.5 N150					*		
C17	25 N150					*		10TCP-Q27
C18	.0022		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C19	10 N150					*		10TCP-Q10
C20	125 N750		N750-SI 130	TCN-130	C10T13U	CCTN-121	CN7-312	
C21	5		NPO-DI 5	DTZ-4R7	C10V5C	CCTO-050	CNO-550	10TCC-V50
C22	200		SI 200	D6-201	L10T2	CCD-201	GP320	10TS-T20
C23	25		SI 25	D6-250	L10Q25	CCD-250	GP425	10TS-Q25
C24	50 N150					*		10TCP-Q47
C25	15 N150					*		10TCP-Q15
C26	6-25							

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C27	10-40							
C28	3-15							
C29	6-25							
C30	450		SI 470	D6-471	BYA10T47	CCD-471	B-347	10TS-T47
C31	3-12							
C32	.005		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C33	1 P100					*		
C34	500		SI 500	D6-501	BYA10T5	CCD-501	B-350	10TS-T50
C35	50		SI 50	D6-500	L10Q50	CCD-500	GP450	10TS-Q50
C36	50		SI 50	D6-500	L10Q50	CCD-500	GP450	10TS-Q50
C37	.005		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C38	1.5 N110					*		
C39	.0025		SI 2500	D6-252	BYA10D25	CCD-252	GP225	5HK-D25
C40	.05 500V		BPD-05	DD-502	CUB6S5	4DP-3-503	GEM-615	6TM-S50
C41	.01 350V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C42	.005		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C43	.0025		SI 2500	D6-252	BYA10D25	CCD-252	GP225	5HK-D25
C44	1 P100					*		
C45	1 P100					*		
C46	.005		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C47	50 N750		N750-SI 50	TCN-50	C10Q50U	CCTN-470	CN7-447	10TCU-Q47
C48	.005		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C49	.005		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C50	50 N750		N750-SI 50	TCN-50	C10Q50U	CCTN-470	CN7-447	10TCU-Q47
C51	.01 350V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C52	.01 350V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C53	250		SI 250	D6-251	L10T25	CCD-251	GP325	10TS-T25
C54	.01 350V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C55	.01 350V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C56	.25 125 V		P288N-25		CUB2P25	2DP-4-254	GEM-2025	2TM-P25
C57	.05 350V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C58	.15 125V		P288N-15		CUB2P15	2DP-3-154	GEM-2015	2TM-P15
C59	.05 350V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C60	.025 250V	Note 2						
C61	.01 350V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C62	.005 500V		P688N-005	D6-502	CUB6D5	6DP-1-502	GEM-625	6TM-D50
C63	470		SI 470	D6-471	BYA10T47	CCD-471	B-347	10TS-T47
C64	10 N150					*		10TCP-Q10
C65	.025 350V		P488N-025			DPMS6S25	4DP-2-253	GEM-4125	4TM-S25
C66	.01 500V	Note 1	P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C67	.005 1000V	Note 1	P1088N-005	DD-502	CUB10D1	16DP-2-502	GEM-1025	10TS-D50
C68	.0025		SI 2500	D6-252	BYA10D25	CCD-252	GP225	5HK-D25

Note 1. Not used in Model Granada 2628.
Note 2. Shielded Unit.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIST-ANCE	WATTS	BLAUPUNKT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	1.3meg 300K Tap	½		ABT-73				Volume
B	Shaft			AK-29				
R2	16meg	½						Bass
R3	1meg	½						Treble

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R4	220K				R30	5000Ω			
R5	50000Ω				R31	200K			
R6	18K				R32	100K			
R7	330K				R33	2meg			
R8	1000Ω				R34	500K			
R9	10K				R35	200K			
R10	40Ω				R36	2meg			
R11	1meg				R37	50K			
R12	30K				R38	500Ω			
R13	40K				R39	1000Ω			
R14	30K 2W				R40	1meg			
R15	1000Ω				R41	200K			
R16	500Ω				R42	1000Ω			
R17	30K 1W				R43	160Ω			
R18	100K				R44	1000Ω 3W	PW3-1000	3G-1000	
R10	2meg				R45	20K			Note 1
R20	1000Ω				R46	50000Ω			Note 1
R21	50K 1W				R47	50000Ω			Note 1
R22	20000Ω 1W				R48	3000Ω			
R23	200K				R49	16K			
R24	300K				R50	30K			
R25	25K				R51	3000Ω			
R26	25K				R52	200Ω			
R27	1meg				R53	100Ω			
R28	2meg				R54	50Ω			
R29	10meg				R55	200Ω			

Note 1. Not used in Model Granada 2628.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		BLAUPUNKT PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Ant. Matching						
L2	RF Choke						
L3	460KC IF Trap						
L4	Loopstick		BC-419	705-A		T532	
L5	SW Ant.						
L6	BC Ant.						
L7A	SW Osc.						
B	RF Choke						
L8	BC Osc.						
L9	Fil. Choke						
L10	2nd FM IF						
L11	1st AM IF						
L12	Ratio Detector						
L13	2nd AM IF						
L14	Fil. Choke						
L15	Tone Choke						
L16	Tone Choke						
L17	Tone Choke						
L18	Tone Choke						
L19	Line Choke						
L20	Line Choke						

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	BLAUPUNKT PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V @ .5A	220V @ .150A DC	6.3V @ 2.4A						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	BLAUPUNKT PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	4500Ω Tap @ ⅜	4-6Ω						
		SEC. 2						
		500Ω						
		SEC. 3						
		NC						
		SEC. 4						
		NC						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	BLAUPUNKT PART No.	QUAM PART No.	
SP1	6"x 8"	PM	4-6Ω	LA812/6Z		
SP2	Electrostatic			LSH518B		
SP3	Electrostatic			LSH518B		

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	BLAUPUNKT PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.080A	B250C100 *	1N1763 ♦	F6 ♦		* Bridge Type Selenium ♦ Silicon, 4 Required

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			BLAUPUNKT PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	8/10A 250V S/B			313.800 (3AG 8/10A 250V) S/B	357001	MDL 8/10	4405

MISCELLANEOUS

ITEM No.	PART NAME	BLAUPUNKT PART No.	NOTES
M3	FM Tuner		Complete
M4	Tuning Cap.		2 Gang
M5	Switch		Function Selector (Pushbutton Type, Includes Off-PU-FA-AM SW & FM)
M6	Switch		Tone

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder

FANON
MODEL 3345

FANON
MODEL 3345

FANON
MODEL 3345

TRADE NAME	Fanon Model 3345
MANUFACTURER	Fanon Electronic Sales Corp., A Div. of Fanon Electronic Industries, Inc., 439 Frelinghuysen Ave., Newark 12, N. J.
TYPE SET	AC Operated 6 Tube Audio Amplifier (Some versions may include a 4 speed manual record player cabinet top, Model 3600)
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 110 Watts, 1 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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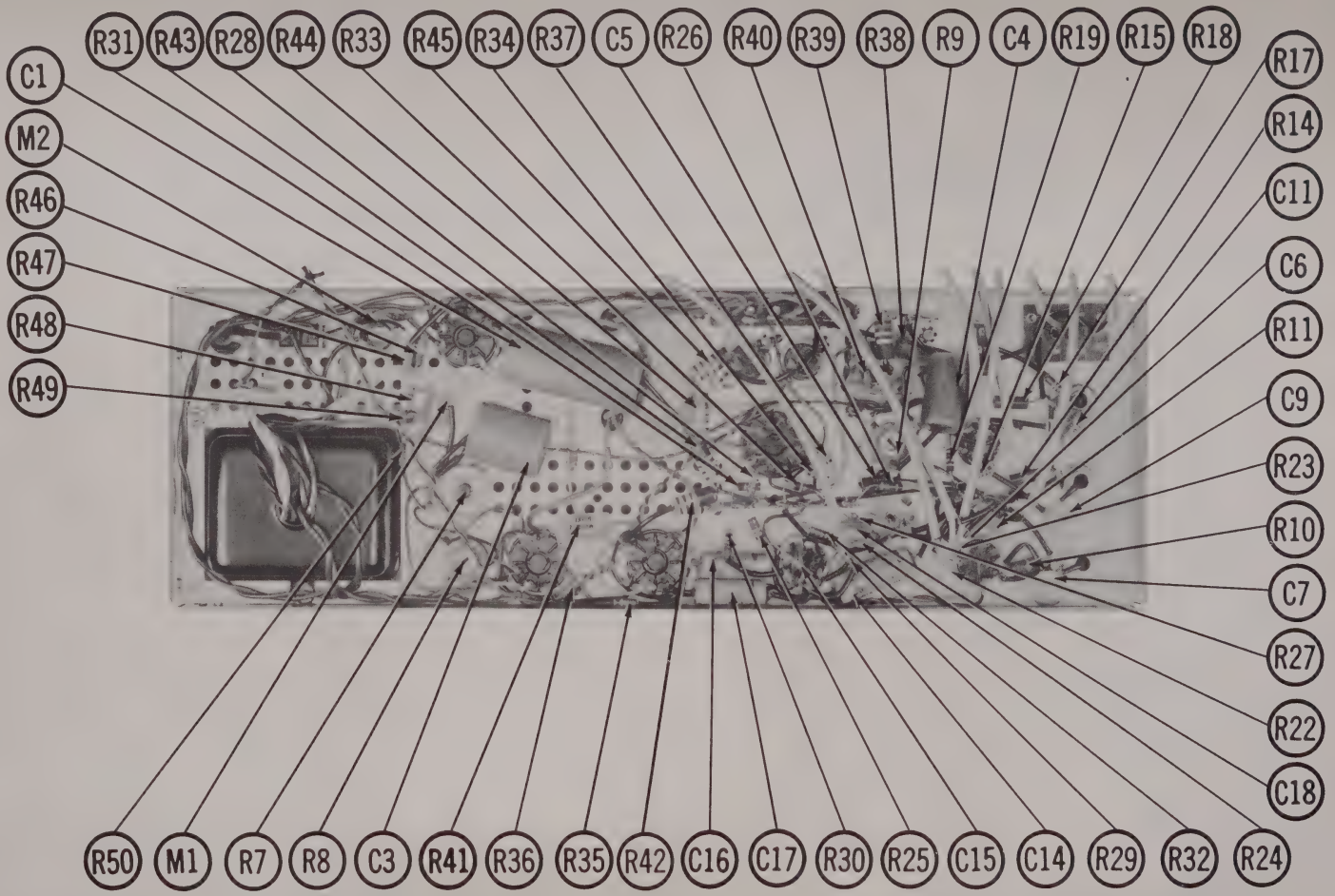


CHASSIS BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (GENERAL ELECTRIC • RAYTHEON • SYLVANIA)
V1	Mic 1 Preamp. - AF Amplifier	12AX7
V2	Mic 2 Preamp- Mic 3 Preamp.	12AX7
V3	AF Amp. -Phase Inv.	7199
V4	Output	6L6GC
V5	Output	6L6GC
V6	Rectifier	GZ34/5AR4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA FANON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	40	350	170-15	PRS1670	BR4035	TC78	TD-40-350	TVA-1611	
C2A	▲40	350	173-09	AFH3-53	C0400	FP399.5	TMT-3865	TVL-3962	
B	▲10	500							
C	■10	400							
C3A	5	100	172-06	PRS1400	NLW5-150	TT150X5	MLV5-150	TE-1504	
B	5	100		PRS1400	NLW5-150	TT150X5	MLV5-150	TE-1504	
C4	5	350	170-19	PRS1600	BR435	TC60	TD-5-350	TVA-1603	
C5	40	10		PTT44	NLW40-10	TT15X40	MLV40-12	TE-1133	
C6	40	10		PTT44	NLW40-10	TT15X40	MLV40-12	TE-1133	

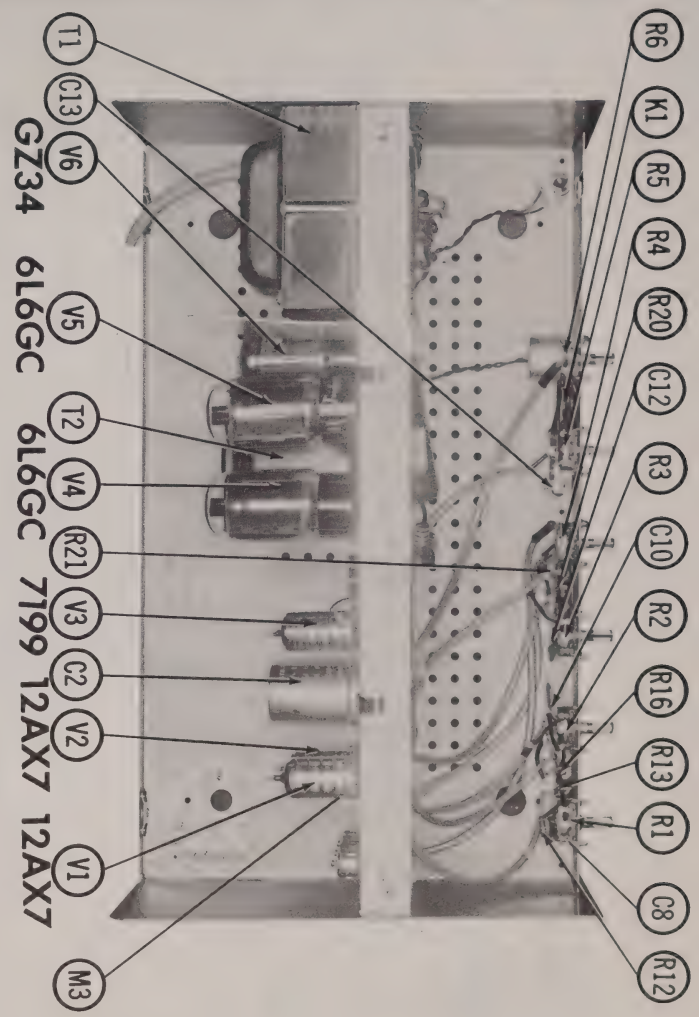
FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C8	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C9	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C10	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C11	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C12	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C13	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C14	.1 200V.		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C15	.02		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C16	.033 400V		P488N-033	DD-303	CUB6S33	4DP-2-233	GEM-4133	4TM-S33
C17	.033 400V		P488N-033	DD-303	CUB6S33	4DP-2-333	GEM-4133	4TM-S33
C18	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA FANON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	203-70	B-70	A47-1meg-Z	Q13-137	U53	Mic. 1
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	1meg	½	203-70	B-70	A47-1meg-Z	Q13-137	U53	Mic. 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R3A	1meg	½	203-70	B-70	A47-1meg-Z	Q13-137	U53	Mic. 3
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R4A	2meg 1meg Tap	½	203-93	BT-78	A4TF3-2meg	Q18-139X		Phono-Radio
B	Shaft			Not Req.	KSS-3	Not Req.		
R5A	1meg	½	203-70	B-70	A47-1meg-Z	Q13-137	U53	Bass
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R6A	1meg	½	200-72	B-70-S	A47-1meg-Z	Q13-137	U53	Treble
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power Off-On
R7A	150K	½	203-40	TT-46	B47-150K-S	B11-328	TA184L	Bias Adjust
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R8A	100Ω	2(WW)	209-03	WN-101	A43-100	W11-084	R100L	Hum Balance #1
B	Shaft			Not Req.	FKS-1/4	SK5	Not Req.	
R9A	100Ω	2(WW)	209-03	WN-101	A43-100	W11-084	R100L	Hum Balance #2
B	Shaft			Not Req.	FKS-1/4	SK5	Not Req.	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R10	2.2meg 1W			
R11	470K			
R12	68K			
R13	470K			
R14	2.2meg 1W			
R15	470K			
R16	470K			
R17	47K			
R18	2.2meg 1W			
R19	470K			
R20	470K			
R21	470K			
R22	100K			
R23	1500Ω			
R24	1.5meg			
R25	820K			
R26	820Ω			
R27	68Ω 5%			
R28	220K			
R29	1meg			
R30	100K 5%			
R31	3900Ω			
R32	1500Ω			
R33	100K 5%			
R34	2700Ω			
R35	75K 5%			
R36	75K 5%			
R37	10K			
R38	56K			
R39	18K 2W			
R40	15K 2W			
R41	2200Ω 5W	PW5-2200	5W-SQ-2200	
R42	33K 2W			
R43	33K 2W			
R44	33K 2W			
R45	33K 2W			
R46	220K 1W			
R47	680K			Note 1
R48	100K			
R49	150K			
R50	220K			

Note 1. Not used in some versions.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	FANON PART No.	REPLACEMENT DATA
K1	Tone Comp.	30mmf, 150mmf, .002mfd, .0025mfd, .02mfd, 10K, 100K, 100K	192-04	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	FANON PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No	
T1	117V @ 1A	800VCT @ .130A DC	5V @ 1.9A	251-07					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V @ .3A	6.3V @ 3A							

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	FANON PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	6500Ω CT	70V Tap @ 16Ω, 8Ω, 4Ω	252-15					

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	FANON PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.001A	291-03		2F4	SR200	

FUSES

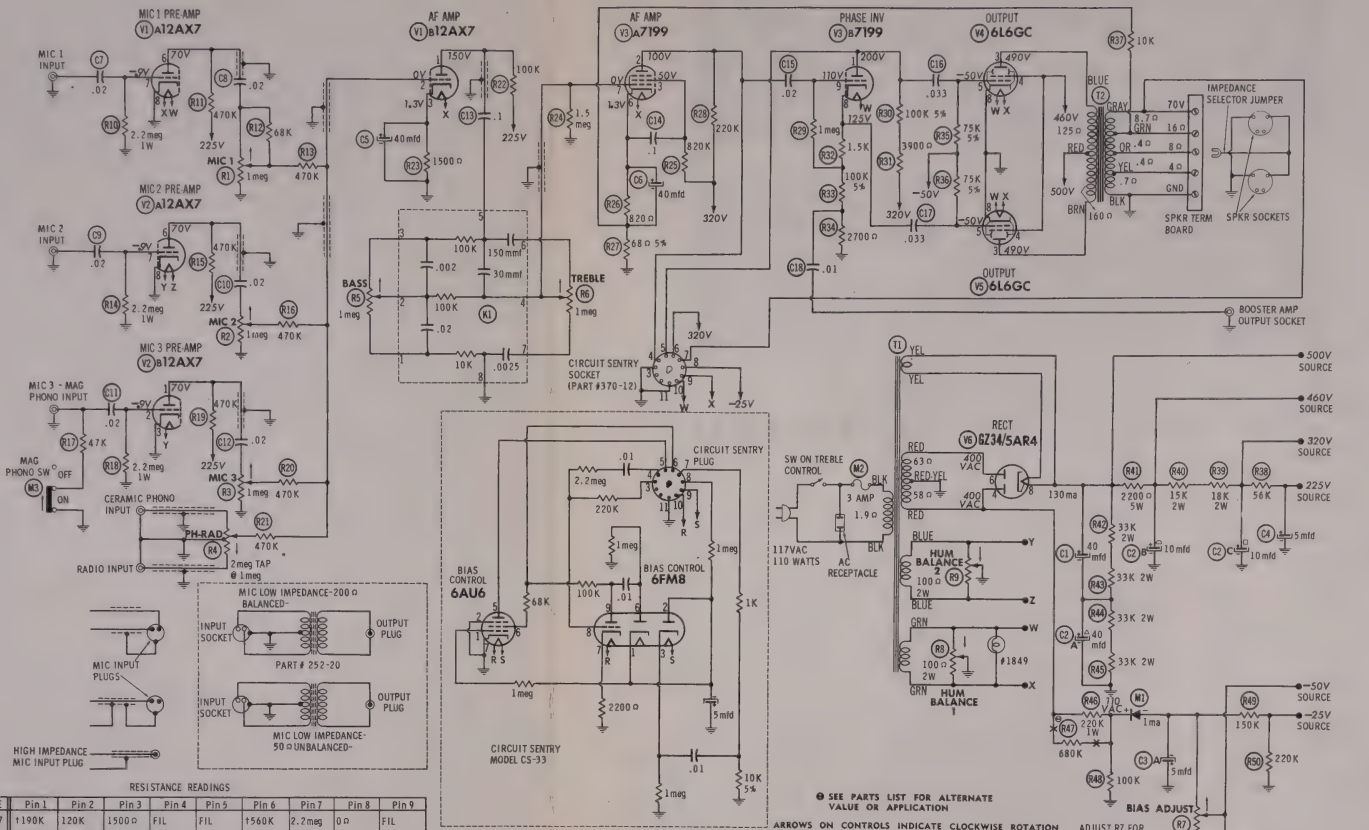
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			FANON PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	3A			312003 (3AG 3A)	342001	AGC 3	HKP

MISCELLANEOUS

ITEM No.	PART NAME	FANON PART No.	NOTES
M3	Switch		Phono-Mag. (Slide Switch)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†190K	120K	†500Ω	FIL	FIL	†560K	2.2meg	0Ω	FIL
V2	12AX7	†560K	2.2meg	0Ω	FIL	FIL	†560K	2.2meg	0Ω	FIL
V3	7199	†140K	†255K	†855K	FIL	FIL	890Ω	110K	100K	1.1meg
V4	6L6GC	TP	FIL	†125Ω	†2200Ω	200K	TP	FIL	0Ω	
V5	6L6GC	NC	FIL	†160Ω	†2200Ω	200K	TP	FIL	0Ω	
V6	5AR4 GZ34	NC	¶ 120K	NC	58Ω	TP	63Ω	TP	¶ 120K	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 8 OF V6. NC NO CONNECTION TP TIE POINT

❷ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

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FANON MODEL 3345

PHOTOFACT® Folder

**GROMMES MODELS
102GTA, 102GTB**

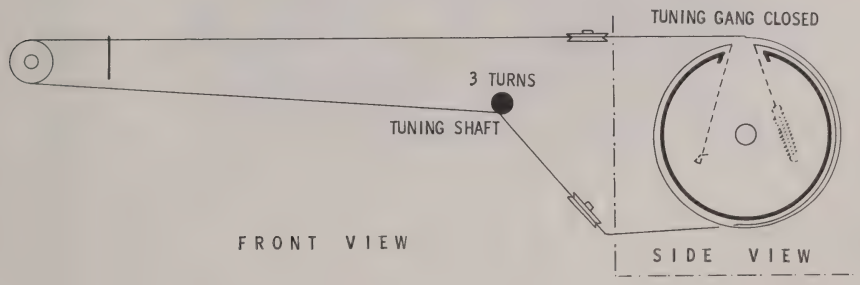
GROMMES MODELS
102GTA, 102GTB

MODEL 102GTA

GROMMES MODELS
102GTA, 102GTB

TRADE NAME	Grommes Model 102GTA, 102GTB		
MANUFACTURER	Precision Electronics, Inc., 9101 King Ave., Franklin Park, Illinois		
TYPE SET	AC Operated 9 Tube FM-AM Tuner		
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles	RATING	42 Watts, .38 Amp. @117 Volts AC
TUNING RANGE—BROADCAST	540 — 1600KC	FREQ. MOD.	88 — 108MC

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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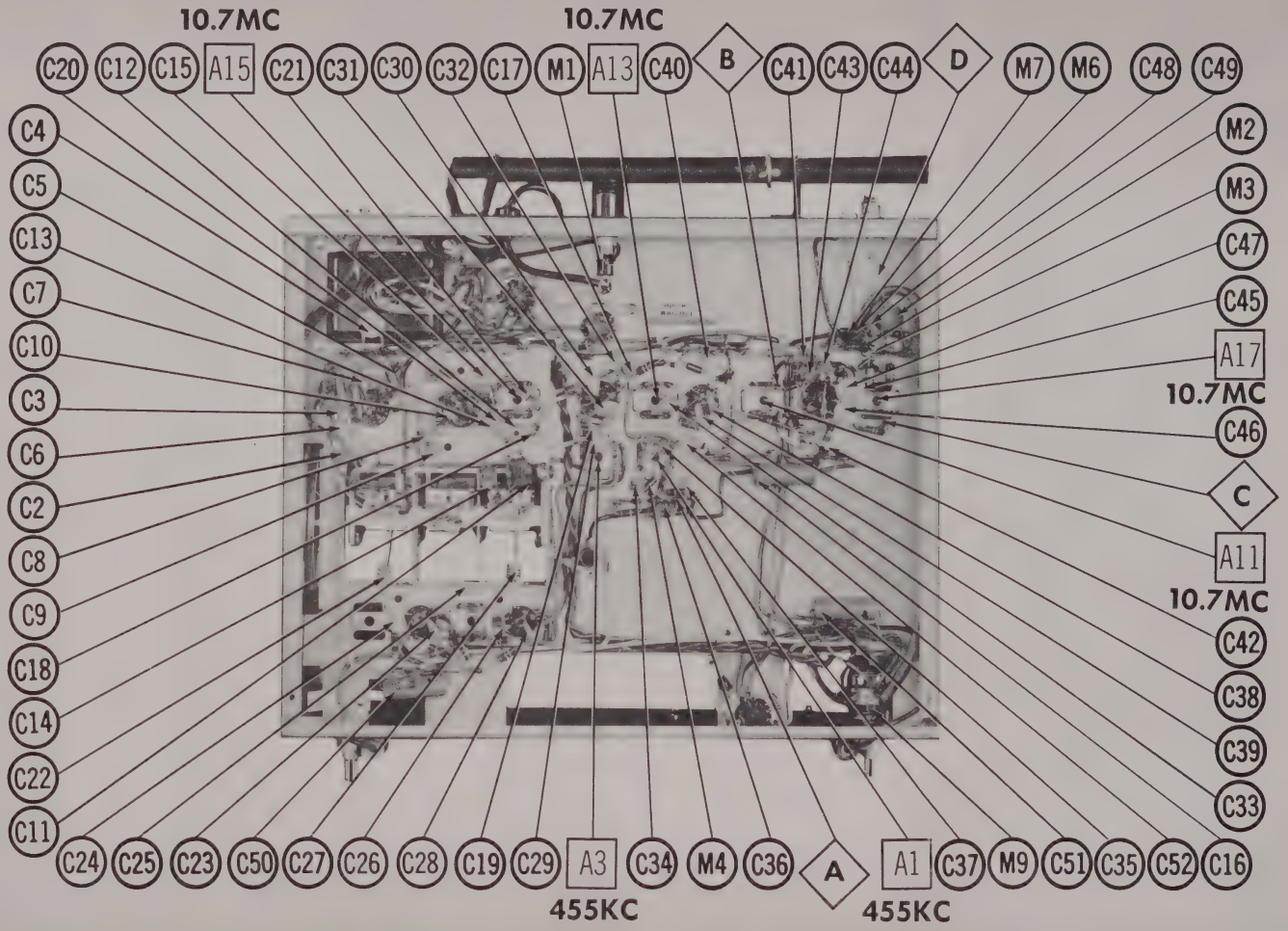
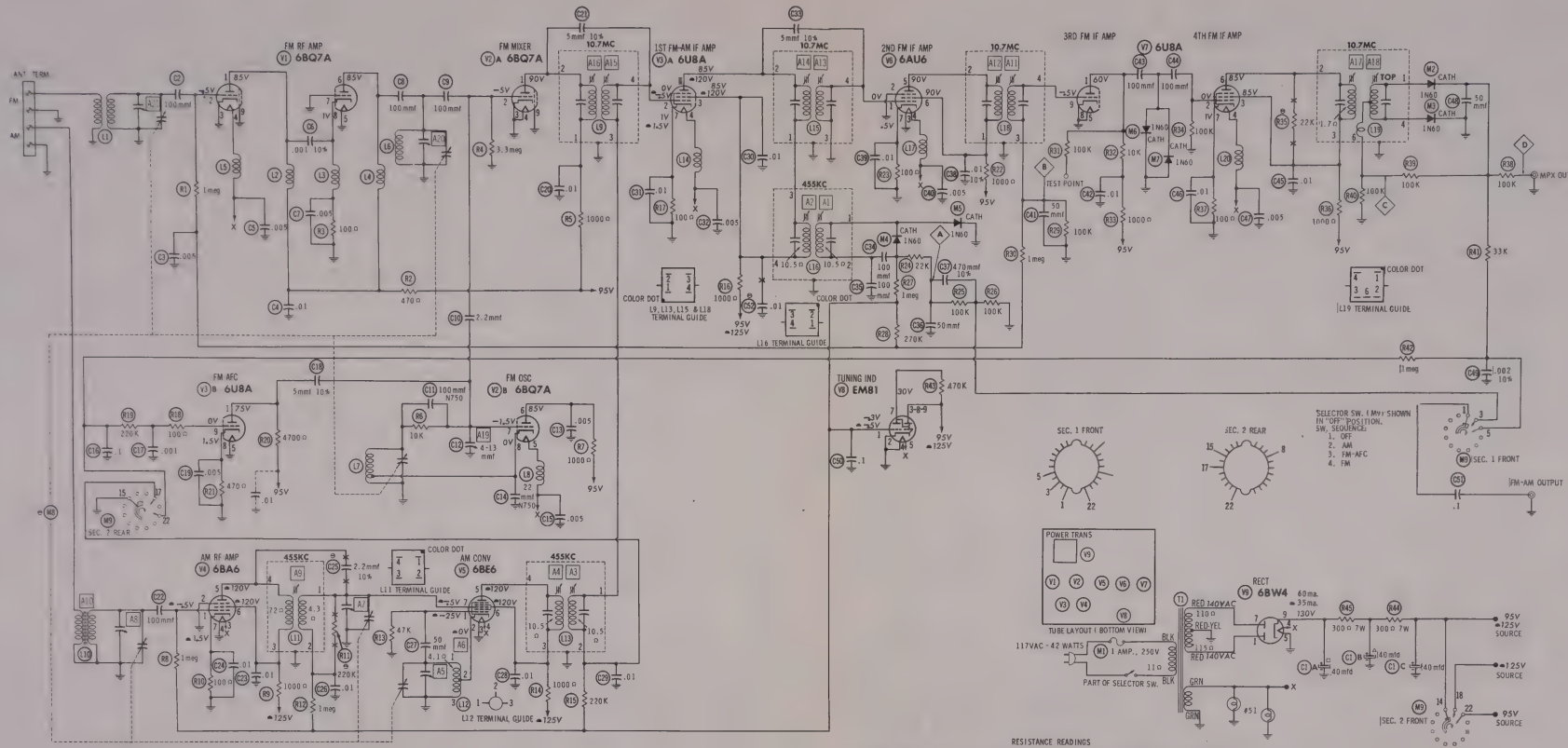
KL693

SET 550 FOLDER 7



CHASSIS BOTTOM VIEW - ALIGNMENT, CAPACITOR & MISC. IDENT.



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±5% in voltage and resistance readings.
6. no signal applied for voltage measurements.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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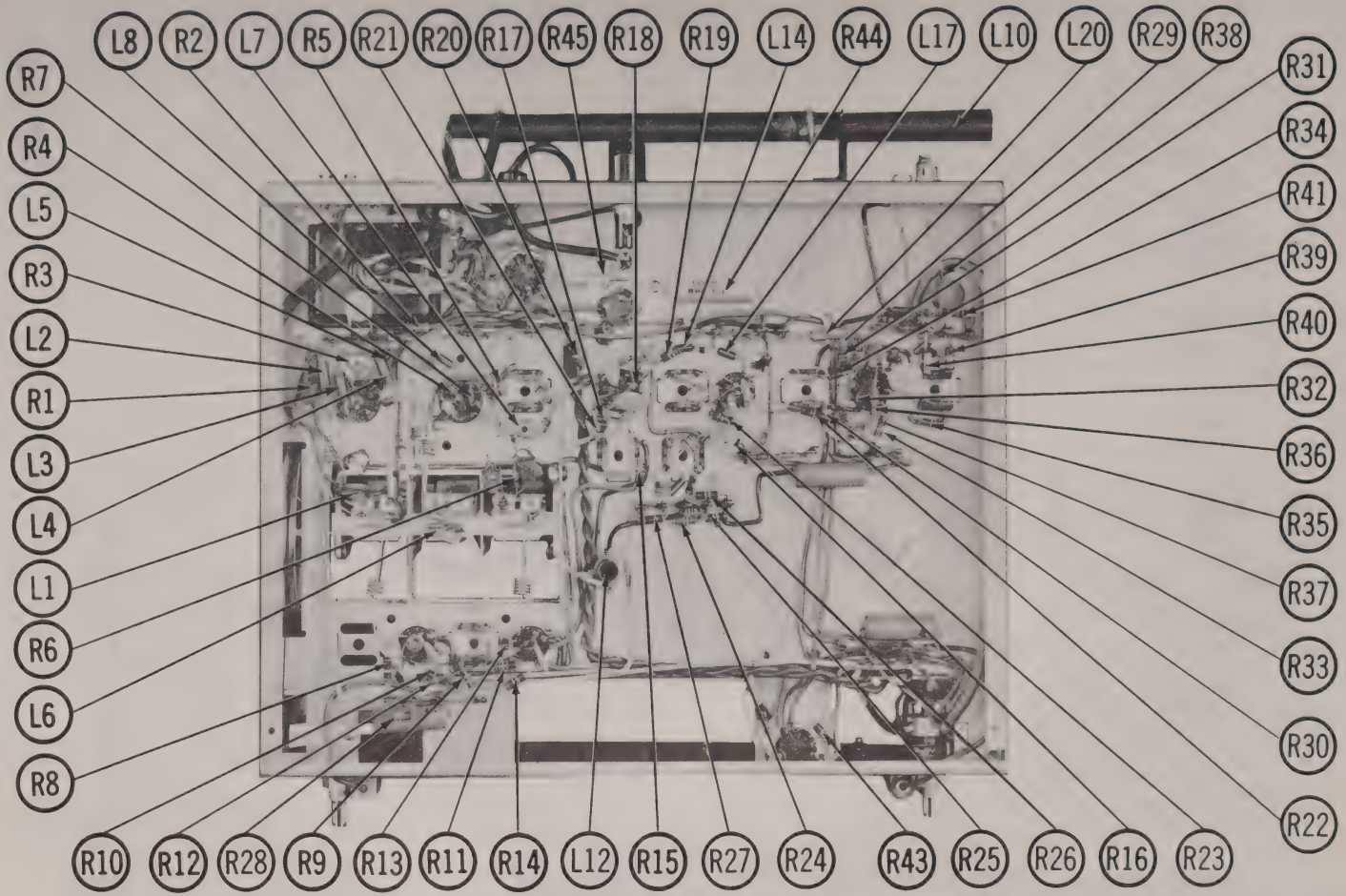
RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BQ7A	†1000Ω	1.6meg	0Ω	FIL	FIL	†1000Ω	0Ω	100Ω	0Ω
V2	6BQ7A	†1600Ω	3.3meg	0Ω	FIL	FIL	†1600Ω	10K	.1Ω	0Ω
V3	6U8A	†5300Ω	11Ω ▲870K	†1600Ω	FIL	FIL	†1600Ω	100Ω	470Ω	220K ▲1.4meg
V4	6BA6	1.6meg	0Ω	FIL	FIL	▲†1600Ω	▲†1600Ω	100Ω		
V5	6BE6	47K	.1Ω	FIL	FIL	▲†1600Ω	▲†1600Ω	1.6meg		
V6	6AU6	.1Ω	0Ω	FIL	FIL	†1600Ω	†1600Ω	100Ω		
V7	6U8A	▲11K	100K	†1600Ω	FIL	FIL	†1600Ω	100Ω	0Ω	100K
V8	EM81 6BA5	200K ▲650K	0Ω	NC	FIL	FIL	NC	†470K	NC	†600Ω
V9	6BW4	115Ω	NC	TP	FIL	FIL	NC	110Ω	NC	¶ INF

ALL MEASUREMENTS TAKEN IN "FM" POSITION WITH "AFC" OFF UNLESS OTHERWISE DESIGNATED.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
▲ MEASURED IN "AM" POSITION. ■ MEASURED WITH "AFC" ON.
† MEASURED FROM PIN 9 OF V9. NC NO CONNECTION

GROMMES MODELS 102GTA, 102GTB



CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.

GROMMES MODELS
102GTA, 102GTB

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:
- A1 thru A4, A9..... GENERAL CEMENT #5097, 8727 WALSCO # 2515
- A5, A7, A8, A20, A21. GENERAL CEMENT #5004, 5008, 5009 WALSCO #2520
- A11 thru A18..... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440 WALSCO #2526, 2543, 2544, 2545
- A6, A19..... GENERAL CEMENT #5003, 8271, 8275, 8276, 8609, 8721, 8722, 9150, 9298 WALSCO #2516, 2518, 2519

AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru .1mfd to pin 7 (grid) of AM Converter. Low side to chassis.	455KC (Unmod.)	(AM) Tuning gang fully open.	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2.	High side to AM antenna terminal. Low side to chassis.	1400KC	1400KC	"	A5	"
3.	"	600KC	600KC	"	A6	"
4.	"	1400KC	1400KC Signal.	"	A7, A8	"
5.	"	600KC	600KC Signal.	"	A9, A10	Adjust for maximum deflection. A10 is adjusted by moving ring along loopstick.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	High side thru .01mfd to pin 2 (grid) of FM Mixer. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point Ⓑ. Common to chassis.	A11, A12, A13, A14, A15, A16	Adjust for maximum deflection.
7.	"	"	"	DC probe thru 1meg to point Ⓒ. Common to chassis.	A17	"
8.	"	"	"	DC probe to point Ⓓ. Common to chassis.	A18	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE — SELECTOR IN FM POSITION

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
6.	High side thru .01mfd to pin 2 (grid) of FM Mixer. Low side to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. to point Ⓑ. Low side to chassis.	A11, A12, A13, A14, A15, A16	Adjust for maximum gain and symmetry of response similiar to Fig. 1 with markers as shown.
7.	"	"	"	Vert. amp. thru 47K to point Ⓒ. Low side to chassis.	A17	"
8.	"	"	"	Vert. amp. to point Ⓓ. Low side to chassis.	A18	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A17 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	Across FM antenna terminals with 150Ω in each lead.	106MC (Unmod.)	(FM) 106MC	DC probe to point Ⓑ. Common to chassis.	A19, A20, A21	Adjust for maximum deflection.
10.	"	90MC	90MC	"	L7, L6, L1	Adjust for maximum deflection by expanding or compressing coil turns.

FIG. 1

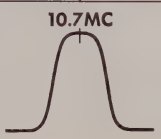
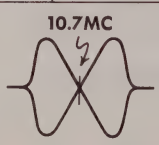


FIG. 2



PARTS LIST AND DESCRIPTIONS

TUBES

◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	FM RF Amplifier	6BQ7A	V6	2nd FM IF Amplifier	6AU6
V2	FM Mixer-FM Osc.	6BQ7A	V7	3rd FM IF Amplifier-4th FM IF Amplifier	6U8A
V3	FM AFC-1st FM-AM IF Amp.	6U8A			
V4	AM RF Amplifier	6BA6	V8	Tuning Indicator	EM81
V5	AM Converter	6BE6	V9	Rectifier	6BW4 (EZ80/6V4) *

* Alternate

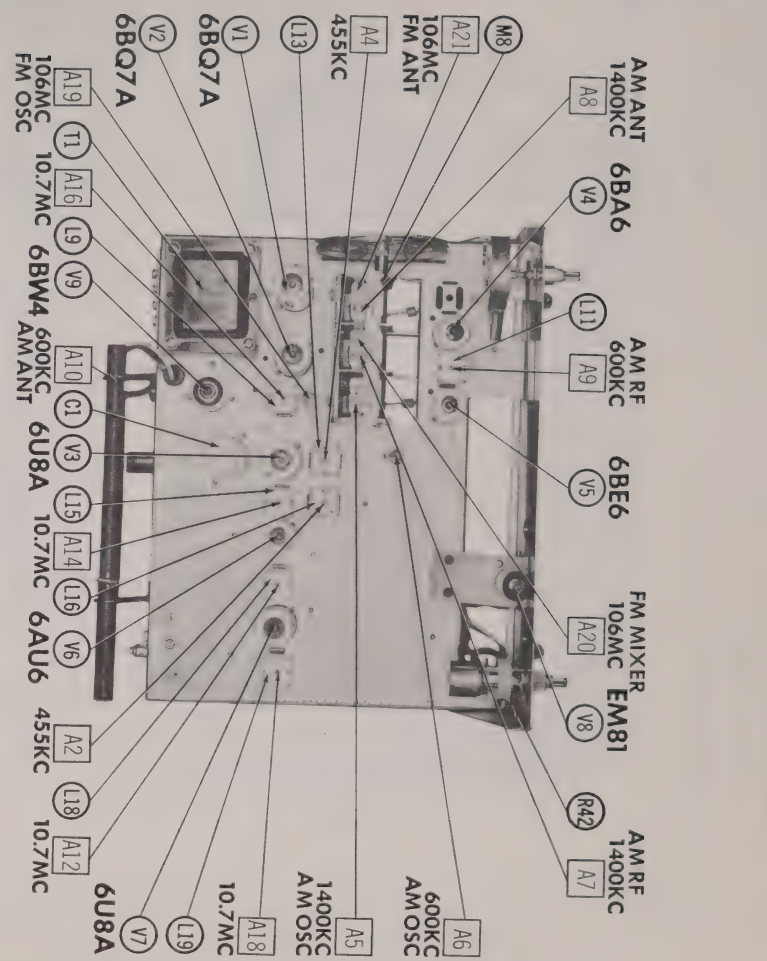
ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA GROMMES PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■40	200		AFH2-29	B0240	FP221	TMD-2250	TVL-2520	
B	▲40	200		PRS1580	BR4025	TC58	TD-40-250	TVA-1511	
C	40	200							

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C3	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C4	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C5	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C6	.001 10%		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C7	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C8	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C9	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C10	2.2		NPO-SI 2.2	TCZ-2R2	C10V22C	CCTO-2R2	CNO-522	10TCC-V22
C11	100 N750		N750-DI-100	TCN-100	L10T1U	CCTN-101	CN7-310	10TCU-T10
C12	4-13							
C13	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C14	22 N750		N750-DI 22	DTN-22	C10Q22U	CCTN-220	CN7-422	10TCU-Q22
C15	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C16	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C17	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C18	5 10%		NPO-SI 5.0	TCZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C19	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C20	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	5 10%		NPO-SI 5.0	TCZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C22	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C23	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	2.2 10%	Note 1	NPO-SI 2.2	TCZ-2R2	C10V22C	CCTO-2R2	CNO-522	10TCC-V22
C26	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	50		SI 50	D6-500	L10Q50	CCD-500	GP450	10TS-Q50
C28	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C30	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C31	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C32	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C33	5 10%		NPO-SI 5.0	TCZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C34	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C35	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C36	50		SI 50	D6-500	L10Q50	CCD-500	GP450	10TS-Q50
C37	470 10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C40	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C41	50		SI 50	D6-500	L10Q5	CCD-500	GP450	10TS-Q50
C42	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C43	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C44	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C45	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C46	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10

CHASSIS—TOP VIEW



GROMMES MODELS
102GTA, 102GTB

FOLDER 7

PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C47	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C48	50		SI 50	D6-500	L10Q50	CCD-500	GP450	10TS-Q50
C49	.002 10%		DI-2000		5R5D2	CCD-202	GP222	10TS-D20
C50	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C51	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C52	.01	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10

Note 1. Not used in some versions.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		REMARKS
		IRC PART No.	WORKMAN TV PART No.	
R1	1meg			
R2	470Ω			
R3	100Ω			
R4	3.3meg			
R5	1000Ω			
R6	10K			
R7	1000Ω			
R8	1meg			
R9	1000Ω			
R10	100Ω			
R11	220K			Note 1
R12	1meg			
R13	47K			
R14	1000Ω			
R15	220K			
R16	1000Ω			
R17	100Ω			
R18	100Ω			
R19	220K			
R20	4700Ω			
R21	470Ω			
R22	1000Ω			
R23	100Ω			

ITEM No.	RATING	REPLACEMENT DATA		REMARKS
		IRC PART No.	WORKMAN TV PART No.	
R24	22K			
R25	100K			
R26	100K			
R27	1meg			
R28	270K			
R29	100K			
R30	1meg			
R31	100K			
R32	10K			
R33	1000Ω			
R34	100K			
R35	22K			Note 1
R36	1000Ω			
R37	100Ω			
R38	100K			
R39	100K			
R40	100K			
R41	33K			
R42	1meg			
R43	470K			
R44	300Ω 7W	PW7-300	7W-SQ-300	
R45	300Ω 7W	PW7-300	7W-SQ-300	

Note 1. Not used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		GROMMES PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	FM Ant.						
L2	RF Choke (3.3uh)		BC-564	4608	RTC-8518	T858	
L3	RF Choke (3.3uh)		BC-564	4608	RTC-8518	T858	
L4	RF Choke (3.3uh)		BC-564	4608	RTC-8518	T858	
L5	Fil. Choke (1uh)		BC-561	4602	RTC-8515	T855	
L6	FM RF						
L7	FM Osc.						
L8	Fil. Choke (1uh)		BC-561	4602	RTC-8515	T855	
L9	1st FM IF		FM-254	1463	RTC-8599	T633	
L10	Loopstick		BC-418	705-A		T532	
L11	AM RF						
L12	AM Osc.		BC-393	70-OSC	RTC-8647	T512	
L13	1st AM IF		BC-352	12-C1	RTC-8632	T607	
L14	Fil. Choke (1uh)		BC-561	4602	RTC-8515	T855	
L15	2nd FM IF		FM-254	1463	RTC-8599	T633	
L16	2nd AM IF		BC-353	12-C2	RTC-8633	T608	
L17	Fil. Choke (1uh)		BC-561	4602	RTC-8515	T855	
L18	3rd FM IF		FM-254	1463	RTC-8599	T633	
L19	Discriminator		FM-255	1465	RTC-8600	T635	
L20	Fil. Choke (1uh)		BC-561	4602	RTC-8515	T855	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	GROMMES PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V Ⓐ .38A	280VCT Ⓐ .060A DC	6.3V Ⓐ 3.5A	TP-1TA					

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			GROMMES PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1A 250V			312001 (3AG 1A 250V)	342001	AGC 1	HKP

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		GROMMES PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N60			1N60	1N60	Ratio Detector (Pigtail)
M3	1N60			1N60	1N60	
M4	1N60			1N60	1N60	AM Detector
M5	1N60			1N60	1N60	AM Detector
M6	1N60			1N60	1N60	Dynamic Limiter
M7	1N60			1N60	1N60	Dynamic Limiter

MISCELLANEOUS

ITEM No.	PART NAME	GROMMES PART No.	NOTES
M8	Tuning Cap.		FM-AM, 6 Gang (AM Sections: Ant. 24-540mmf, RF 29-540mmf, Osc. 27-185mmf) (Model 102GTA is a 5 gang)
M9	Switch		Function Selector (Rotary Wafer Type) includes Power Off-On Switch

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

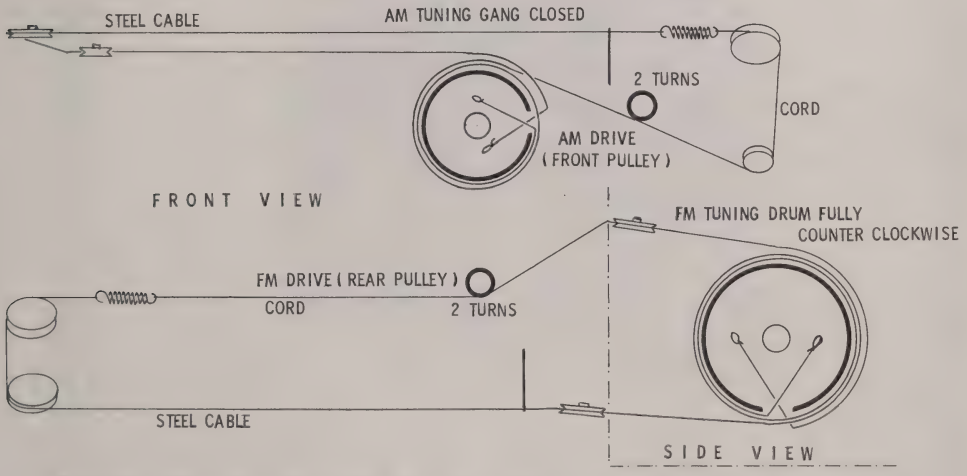
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder

GRUNDIG MAJESTIC MODEL 4019U

TRADE NAME	Grundig Majestic Model 4019U		
IMPORTER	Majestic International Sales, 743 N. LaSalle Street, Chicago 10, Illinois		
TYPE SET	AC Operated 8 Tube FM-BC-SW-LW Receiver With Stereo Amplifier		
POWER SUPPLY	110-120/220 Volts AC, 60 Cycles	RATING	58 Watts, .55 Amp. @117 Volts AC
TUNING RANGES	BROADCAST 510-1620KC FREQ. MOD. 88 — 108MC	LONG WAVE SHORT WAVE	145 — 350KC 5.9 — 16MC

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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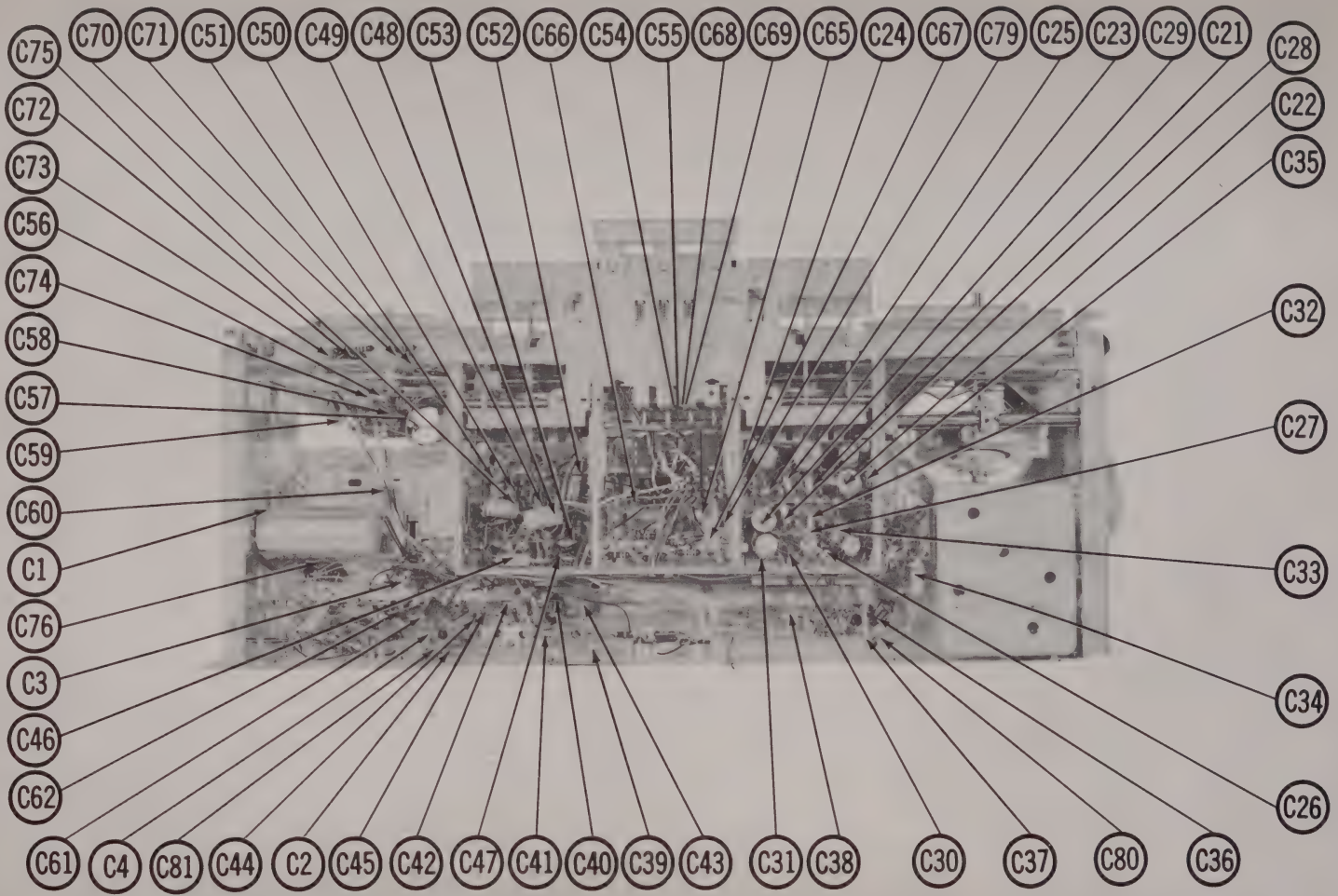
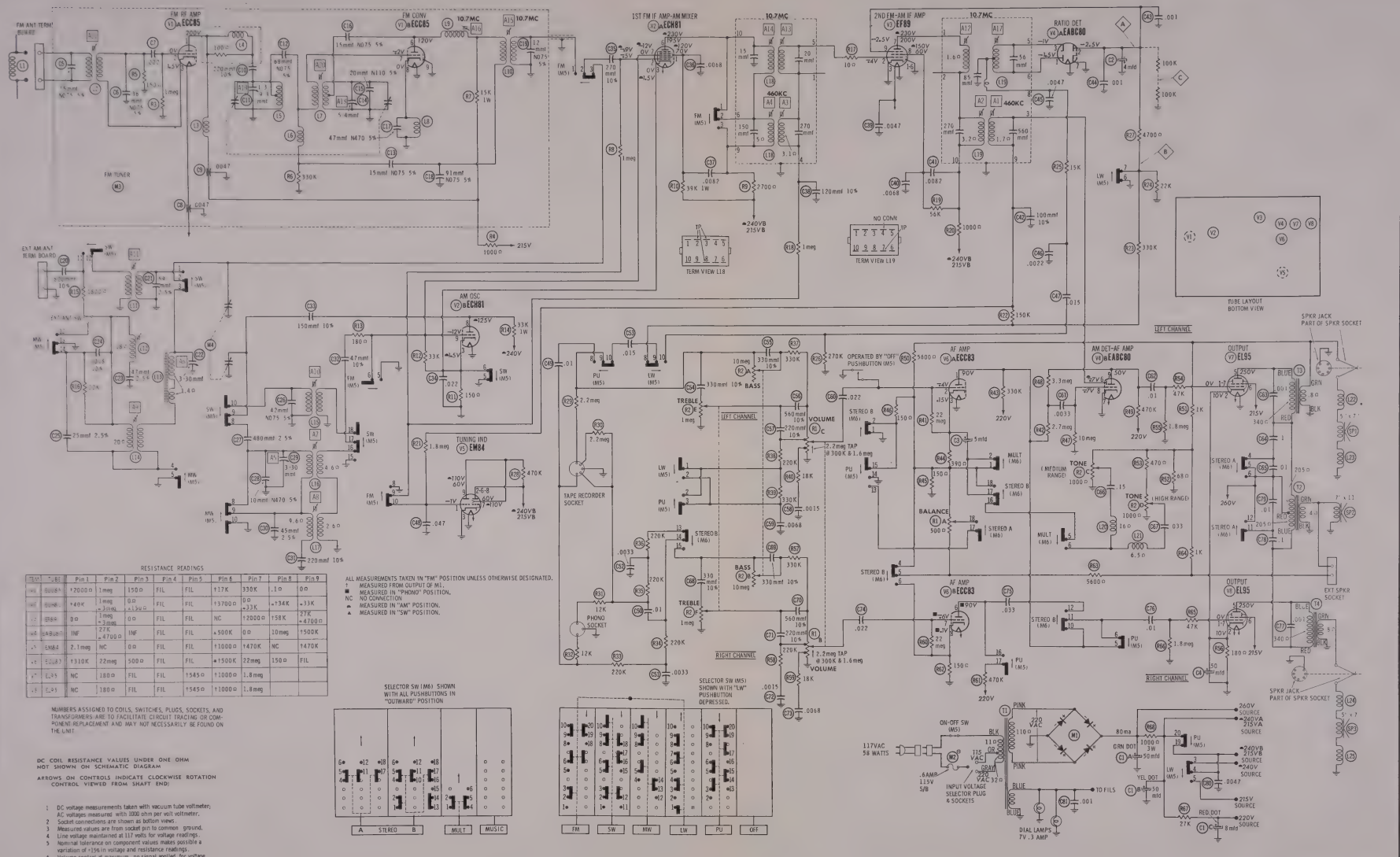
KK651

GRUNDIG MAJESTIC MODEL 4019U
GRUNDIG MAJESTIC MODEL 4019U
SET 550 FOLDER 8



CHASSIS BOTTOM VIEW-CAPACITOR IDENT.



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6ECC85	†2000 Ω	1 meg	150 Ω	FIL	FIL	†17K	330K	.1 Ω	0 Ω
V2	6ECH81	†40K	1 meg + 39K	0 Ω + 4.2K Ω	FIL	FIL	†3700 Ω	0 Ω + 33K	+ †34K	+ 33K
V3	6EF95	3 Ω	1 meg + 3 meg	0 Ω	FIL	FIL	NC	†2000 Ω	†58K	27K + 6700 Ω
V4	6EA8C80	INF	27K + 47000 Ω	INF	FIL	FIL	▲500K	0 Ω	10 meg	†500K
V5	EM84	2.1 meg	NC	0 Ω	FIL	FIL	†10000 Ω	†470K	NC	†470K
V6	6ECC83	†310K	22 meg	500 Ω	FIL	FIL	▲†500K	22 meg	150 Ω	FIL
V7	EL95	NC	180 Ω	FIL	FIL	†545 Ω	†1000 Ω	1.8 meg		
V8	EL95	NC	180 Ω	FIL	FIL	†545 Ω	†1000 Ω	1.8 meg		

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
† MEASURED FROM OUTPUT OF M1.
■ MEASURED IN "PHONO" POSITION.
NC NO CONNECTION
▲ MEASURED IN "AM" POSITION.
▲ MEASURED IN "SW" POSITION.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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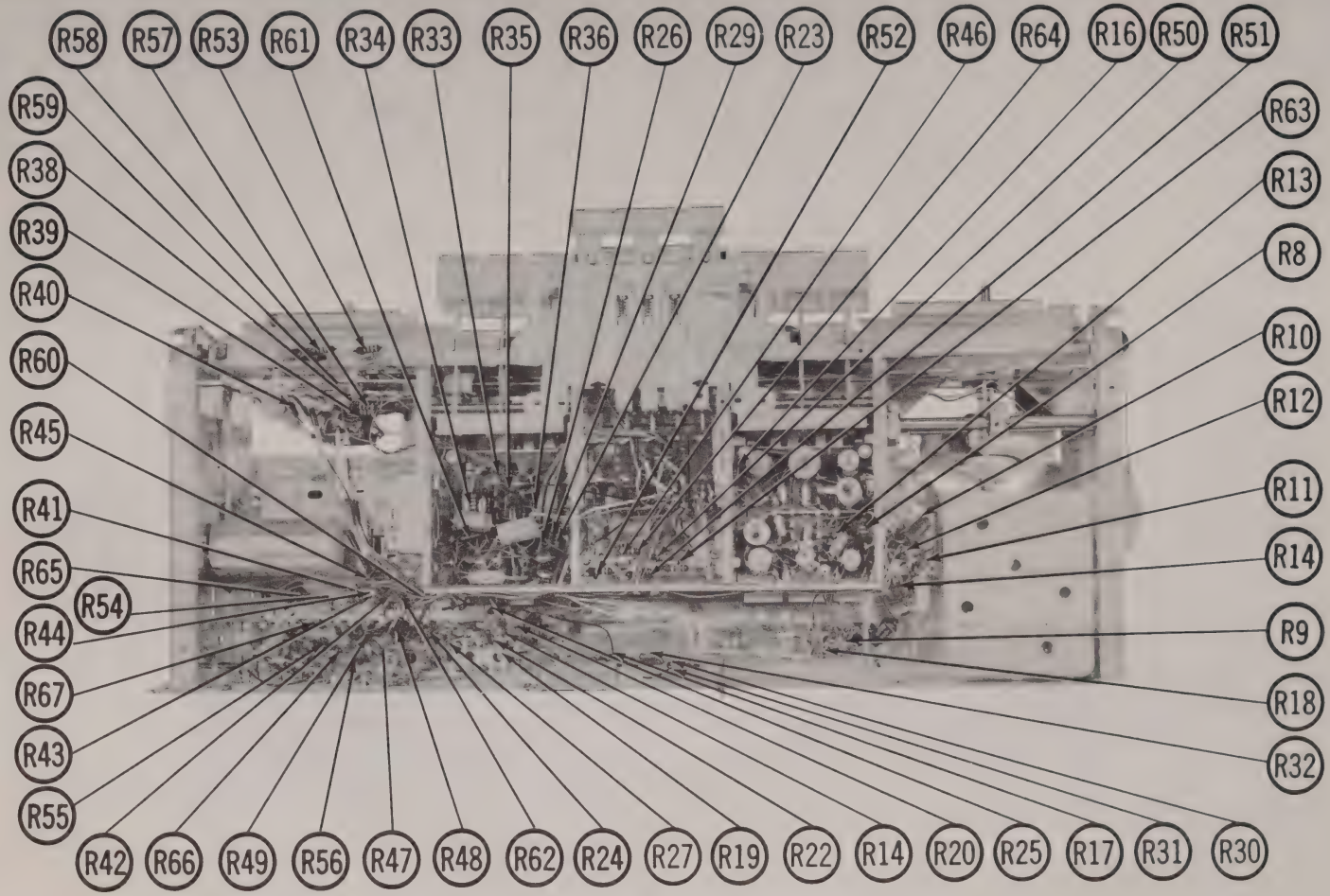
GRUNDIG MAJESTIC MODEL 4019U



CHASSIS BOTTOM VIEW-RESISTOR IDENT.

GRUNDIG MAJESTIC
MODEL 4019U

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.
Suggested Alignment Tools: A17, A18..... GENERAL CEMENT #5003, 8271, 8275, 8276, 8609, 8721, 8722, 9150, 9298
WALSCO #2516, 2518, 2519

AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru .1mfd to pin 2 (grid) of AM Mixer. Low side to chassis.	460KC (400∿ 30% AM)	(AM) Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	High side thru 470Ω to AM antenna terminal. Low side to chassis.	1600KC	1600KC	"	A5, A6	"
3.	"	600KC	600KC	"	A7	"
4.	"	250KC	(LW) 250KC	"	A8, A9	"
5.	"	10MC	(SW) 10MC	"	A10, A11	Adjust for maximum output. Repeat Steps 2 thru 5.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

Connect two matched 100K (±1%) resistors in series from point Ⓐ to chassis. The junction of these two resistors is alignment point Ⓒ as shown on the schematic.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	Across FM antenna terminal	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point Ⓐ. Common to chassis.	A12, A13, A14, A15, A16	Adjust for maximum deflection.
7.	"	"	"	DC probe to point Ⓑ. Common to point Ⓒ.	A17	Adjust for zero reading. A positive and negative reading will be obtained on either side ot the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
6.	Across FM antenna terminals.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. to point Ⓐ. Low side to chassis.	A12, A13, A14, A15, A16	Disconnect stabilizing capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C2.
7.	"	"	"	Vert. amp. to point Ⓑ. Low side to chassis.	A17	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A16 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	Across FM antenna terminals with 150Ω in each lead.	108MC (Unmod.)	(FM) 108MC	DC probe to point Ⓐ. Common to chassis.	A18, A19	Adjust for maximum deflection.
9.	"	88MC	88MC	"	A20, A21	"

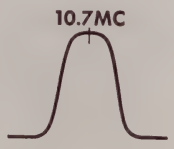


FIG. 1

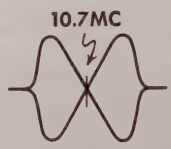
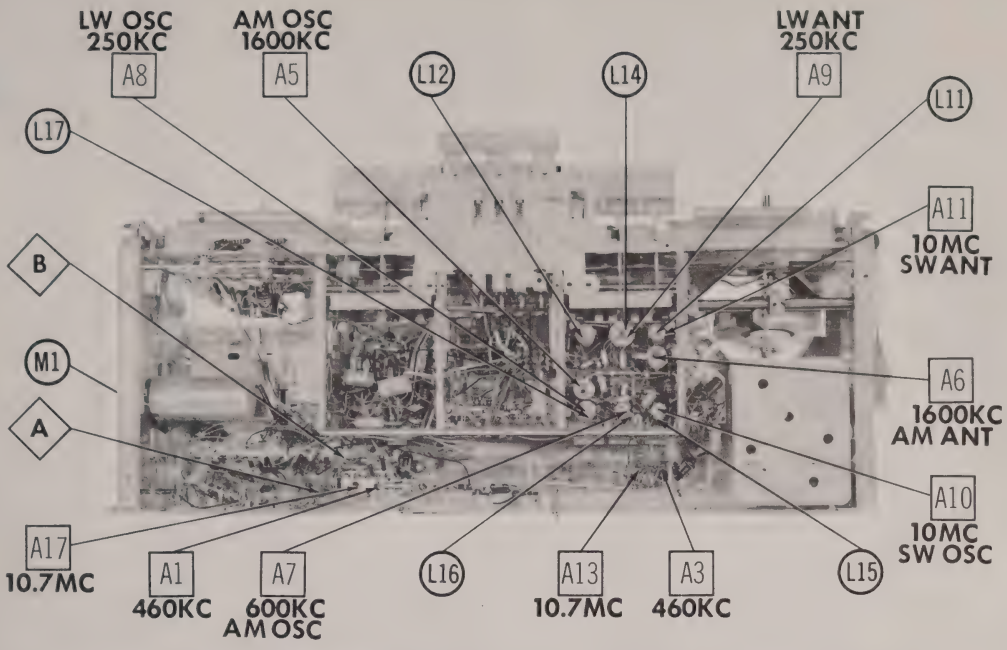
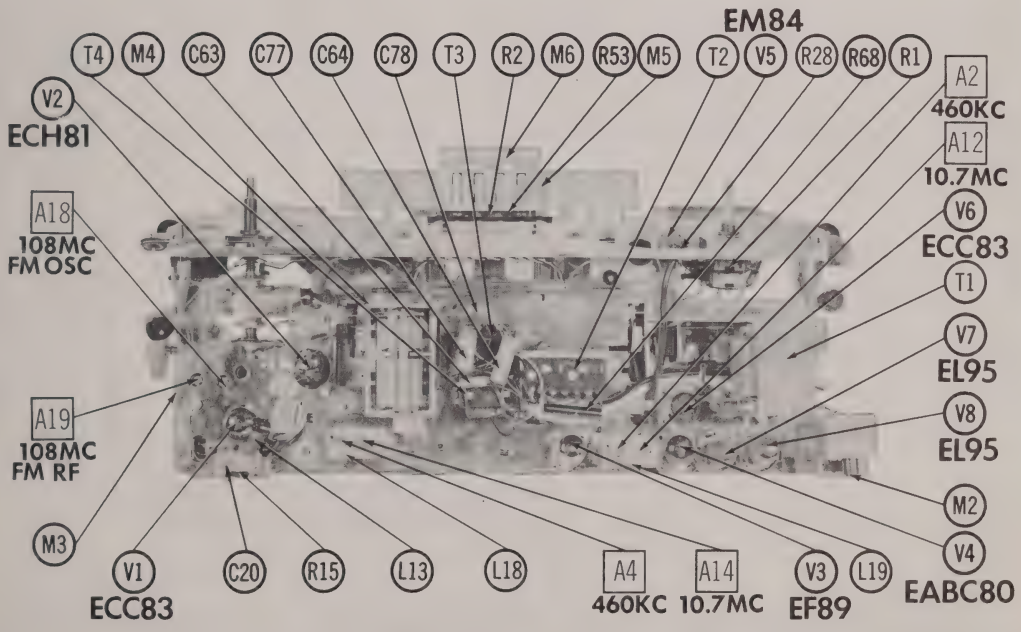


FIG. 2



CHASSIS BOTTOM VIEW-ALIGN., INDUCTOR & MISC. IDENT.



CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE
V1	FM RF Amp. -FM Conv.	ECC85
V2	1st FM IF Amp. -AM Mixer-AM Osc.	ECH81
V3	2nd FM-AM IF Amp.	EF89
V4	Ratio Det. -AM Det. -Left Channel AF Amp.	EABC80
V5	Tuning Indicator	EM84
V6	Left Channel AF Amp. -Right Channel AF Amp.	ECC83
V7	Left Channel Output	EL95
V8	Right Channel Output	EL95

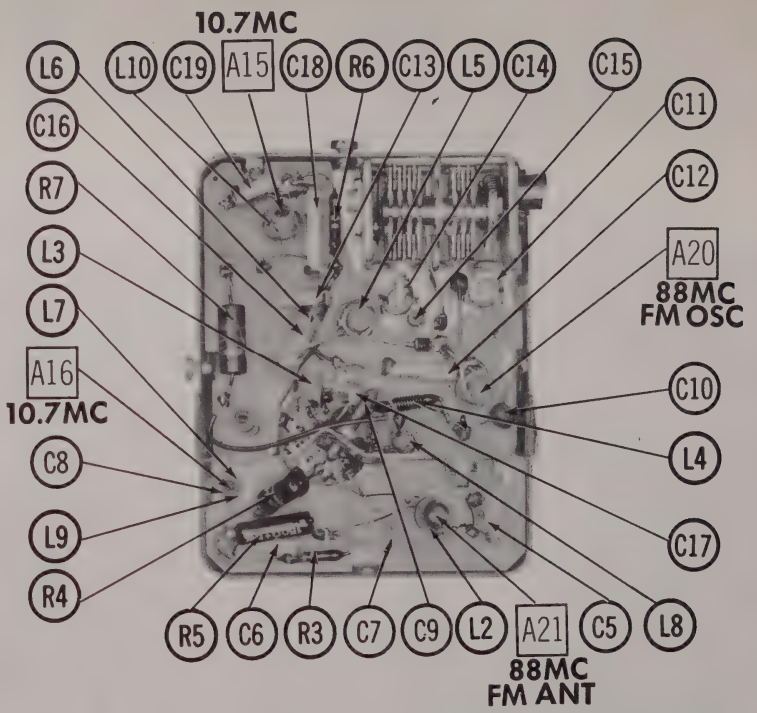
ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Grundig Majestic PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	50	350	〉		B0436	FP230.5	TMD-2655	TVL-2760	
B	50	350			BR5035	TC79	TD-8-350	TVA-1713	
C	8	350							
C2	4	70		PRS1400	NLW4-150	TT80X4	MLV5-100	TE-1403	
C3	5	12		PTT51	NLW5-15	TT12X5	MLV5-12	TE-1127	
C4	50	12		PTT59	NLW50-15	TT15X50	MLV50-12	TE-1133	

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	15 N075 5%					*		
C6	36 N075 5%					*		
C7	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C8	.0047							
C9	.0047							
C10	220 10%		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C11	1.3-9.3							
C12	68 N075 5%					*		
C13	15 N075 5%					*		
C14	.5-4							
C15	20 N110 5%					*		
C16	15 N075 5%					*		
C17	47 N470 5%					*		
C18	91 N075 5%					*		
C19	12 N075 5%					*		
C20	820 10%			DD-821	5R5T82	CCD-821	GP382	10TS-T82
C21	59 2.5%							
C22	3-30							
C23	47 2.5%					CM-15E-470G		

FM RF SUBCHASSIS



PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C24	.0018 10%			DD-182	5R5D18	CCD-182	GP218	10TS-D18
C25	25 2.5%					CM-15E-240G	MCE220	
C26	42 N075 5%					*		
C27	480 2.5%					CM-15E-471G	MCE244	
C28	10 N470 5%					*		
C29	3-30							
C30	45 2.5%					CM-15E-450G		
C31	220 10%		NPO-SI 220	D6-221	L10T22	CCD-221	GP322	10TS-T22
C32	47 10%		NPO-SI 47	D6-470	L10Q47	CCD-472	GP447	10TS-Q47
C33	150 10%		NPO-SI 150	D6-151	L10T15	CCD-151	GP315	10TS-T15
C34	.022 250V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C35	270 10%		NPO-SI 270	D6-271	L10T27	CCD-271	GP327	10TS-T27
C36	.0068 500V		P688N-0068	D6-682	CUB6D68	6DP-1-682	GEM-6268	6TM-D68
C37	.0082			DD-822	DPMS6D82	CCD-822	B-282	30GA-D82
C38	120 10%		NPO-SI 120	D6-121	L10T12	CCD-121	GP312	10TS-T12
C39	.0047		SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C40	.0068 500V		P688N-0068	D6-682	CUB6D68	6DP-1-682	GEM-6258	6TM-D68
C41	.0082			DD-822	DPMS6D82	CCD-822	B-282	30GA-D82
C42	100 10%		NPO-SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C43	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C44	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C45	.0047		SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C46	.0022 500V		P688N-0022	D6-222	CUB6D22	6DP-1-222	GEM-6222	6TM-D22
C47	.015 250V		P488N-015	DD-153	CUB6S15	4DP-1-153	GEM-4115	4TM-S15
C48	.047 250V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C49	.01 250V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C50	.01 250V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C51	.0033 500V		P688N-0033	DD-332	CUB6D33	6DP-1-332	GEM-6233	6TM-D33
C52	.0033 500V		P688N-0033	D6-332	CUB6D33	6DP-1-332	GEM-6233	6TM-D33
C53	.015 250V		P488N-015	DD-153	CUB6S15	4DP-1-153	GEM-4115	4TM-S15
C54	330 10%			D6-331	L10T33	CCD-331	GP333	10TS-T33
C55	330 10%			D6-331	L10T33	CCD-331	GP333	10TS-T33
C56	560 10%			D6-561	5R5T56	CCD-561	GP356	10TS-T56
C57	220 10%		NPO-SI 220	D6-221	L10T22	CCD-221	GP322	10TS-T22
C58	.0015 500V		P688N-0015	D6-152	CUB6D15	6DP-1-152	GEM-6215	6TM-D15
C59	.0068 500V		P688N-0068	D6-682	CUB6D68	6DP-1-682	GEM-6268	6TM-D68
C60	.022 250V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C61	.0033 500V		P688N-0033	D6-332	CUB6D33	6DP-1-332	GEM-6233	6TM-D33
C62	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C63	.001 500V		P688N-001	D6-102	CUB6D1	6DP-1-102	GEM-621	6TM-D10
C64	.1 500V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C65	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C66	.15 250V		P488N-15		CUB2P15	4DP-4-154	GEM-4015	4TM-P15
C67	.033 250V		P488N-033	DD-303	CUB4S33	4DP-2-333	GEM-4133	4TM-S33
C68	330 10%			D6-331	L10T33	CCD-331	GP333	10TS-T33
C69	330 10%			D6-331	L10T33	CCD-331	GP333	10TS-T33
C70	560 10%			D6-561	5R5T56	CCD-561	GP356	10TS-T56
C71	220 10%		NPO-SI 220	D6-221	L10T22	CCD-221	GP322	10TS-T22

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C72	.0015 500V		P688N-0015	D6-152	CUB6D15	6DP-1-152	GEM-6215	6TM-D15
C73	.0068 500V		P688N-0068	D6-682	CUB6D68	6DP-1-682	GEM-6268	6TM-D68
C74	.022 250V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C75	.033 250V		P488N-033	DD-303	CUB6S33	4DP-2-333	GEM-4133	4TM-S33
C76	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C77	.001 500V		P688N-001	D6-102	CUB6D1	6DP-1-102	GEM-621	6TM-D10
C78	.1 500V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C79	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C80	.0047		SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C81	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Grundig Majestic PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	500Ω							Balance
B	2.2meg*							Volume, Right Channel
C	2.2meg*							Volume, Left Channel
R2A	10meg							Tone, Bass, Left Channel
B	10meg							Tone, Bass, Right Channel
C	1000Ω							Tone, Medium Range
D	1000Ω							Tone, High Range
E	1meg							Tone, Treble, Left Channel
F	1meg							Tone, Treble, Right Channel

* Taps @ 300K and 1.6meg.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R3	1meg				R11	150Ω			
R4	1000Ω				R12	33K			
R5	150Ω 1W				R13	180Ω			
R6	330K				R14	33K 1W			
R7	15K 1W				R15	1800Ω			
R8	1meg				R16	22K			
R9	2700Ω				R17	10Ω			
R10	39K 1W				R18	1meg			

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R19	56K				R44	390Ω			
R20	1000Ω				R45	150Ω			
R21	1.8meg				R46	150Ω			
R22	150K				R47	10meg			
R23	330K				R48	3.3meg			
R24	22K				R49	470K			
R25	15K				R50	5600Ω			
R26	270K				R51	1000Ω			
R27	4700Ω				R52	68Ω			
R28	470K				R53	470Ω			
R29	2.2meg				R54	47K			
R30	2.2meg				R55	1.8meg			
R31	12K				R56	180Ω			
R32	12K				R57	330K			
R33	220K				R58	220K			
R34	220K				R59	18K			
R35	220K				R60	22meg			
R36	220K				R61	470K			
R37	330K				R62	150Ω			
R38	220K				R63	5600Ω			
R39	330K				R64	1000Ω			
R40	18K				R65	47K			
R41	22meg				R66	1.8meg			
R42	2.7meg				R67	27K			
R43	330K				R68	1000Ω 3W	PW3-1000	3W-SQ-1000	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Grundig Majestic PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	FM Ant. Matching	9238-069					① Wound on 100Ω
L2	FM Ant.	9231-027					
L3	RF Choke	BV1975					
L4	RF Choke	BV1956 ①					
L5	FM RF	9226-037					
L6	RF Choke	BV1976					
L7	FM Osc.	9226-038					
L8	RF Choke	BV1960					
L9	FM Mixer Plate	9226-032					
L10	1st FM IF	9226-033					
L11	SW Ant.	9232-001					
L12	460KC IF Trap	9208-055					
L13	Loopstick	9233-053	BC-419	705-A		T532	
L14	LW Ant.	9208-054					
L15	SW Osc.	9232-010					
L16	BC Osc.	9208-13					
L17	LW Osc.	9208-56					
L18A	2nd FM IF	7207-348					
B	1st AM IF						
L19A	Ratio Detector	7207-328					
B	2nd AM IF						
L20	Tone Choke	9227-060					
L21	Tone Choke	9227-055					
L22	Tone Choke	9238-060					
L23	Tone Choke	9238-060					
L24	Tone Choke	9238-060					
L25	Tone Choke	9238-060					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	Grundig Majestic PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	220V, 117V @ .55A	220V @ .140A AC	6.3V @ 3.6A	9078-073					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Grundig Majestic PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	8200Ω CT	1-2Ω	9060-078					
T3	5000Ω	1-2Ω	9038-036					
T4	5000Ω	1-2Ω	9038-036					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Grundig Majestic PART No.	QUAM PART No.	
SP1	5"x 7"	PM	1-2Ω	0459/31	57A15	
SP2	7"x 11"	PM	1-2Ω	7048-005		
SP3	5"x 7"	PM	1-2Ω	0459/31	57A15	

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	Grundig Majestic PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.080A	B250C75 *	1N1763 ♦	F6 ♦		* Selenium Bridge ♦ Silicon, 4 Required

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Grundig Majestic PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2		6/10A 115V S/B .3A* 220V S/B					GMA 7/10	

* Used when AC input voltage is 220VAC.

MISCELLANEOUS

ITEM No.	PART NAME	Grundig Majestic PART No.	NOTES
M3	FM Tuner		Complete
M4	Tuning Cap.	9653-012	2 Gang
M5	Switch		Function Selector (Pushbutton Type) Includes PU, LW, BC, SW, FM, & Off
M6	Switch		Tone (Pushbutton Type) Includes Music, Multisonic, & Stereo

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder with CIRCUITRACE®

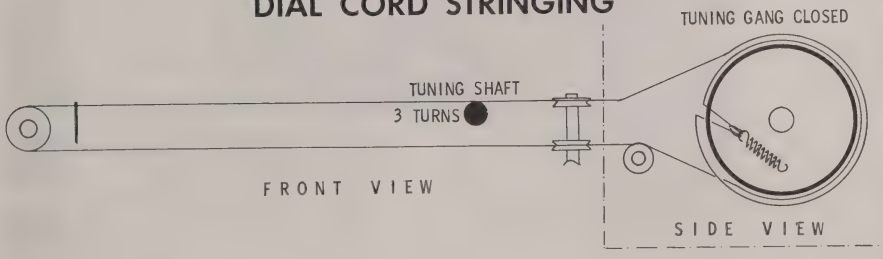
KOWA
MODEL KTF-1

KOWA
MODEL KTF-1

TRADE NAME	Kowa Model KTF-1
SUPPLIER	Longwood Radio Distributors, Inc., 1261 Broadway, Suite 704 , New York 1, N. Y.
TYPE SET	Battery Operated Transistorized Portable FM-AM Receiver
POWER SUPPLY	6 Volts DC
RATING	10MA @ 6 Volts DC (No Signal, Min. Volume) 20MA @ 6 Volts DC (Signal, Normal Volume)
TUNING RANGE—BROADCAST	535 — 1605KC
FREQ. MOD.	88 — 108MC

KOWA
MODEL KTF-1

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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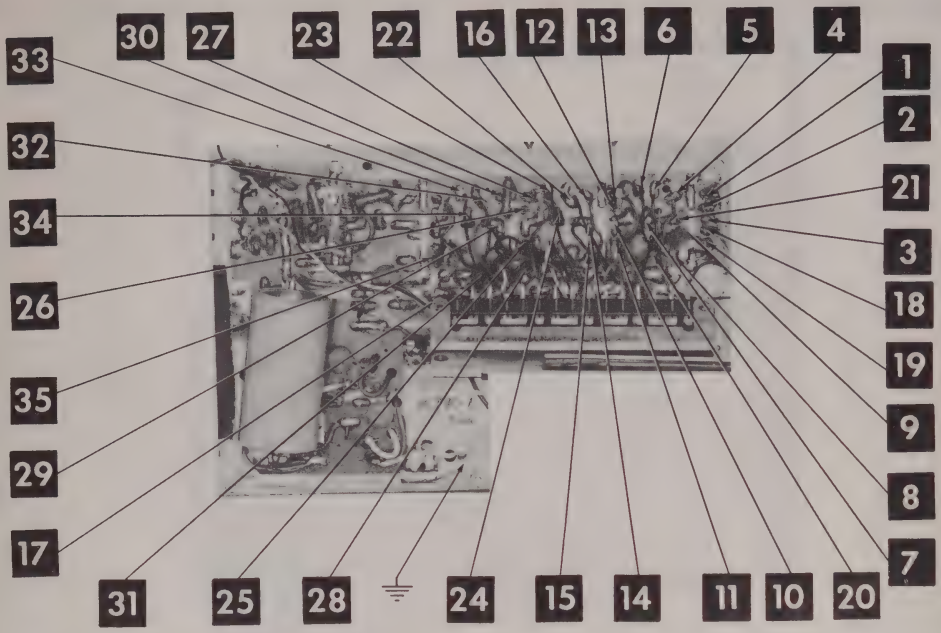

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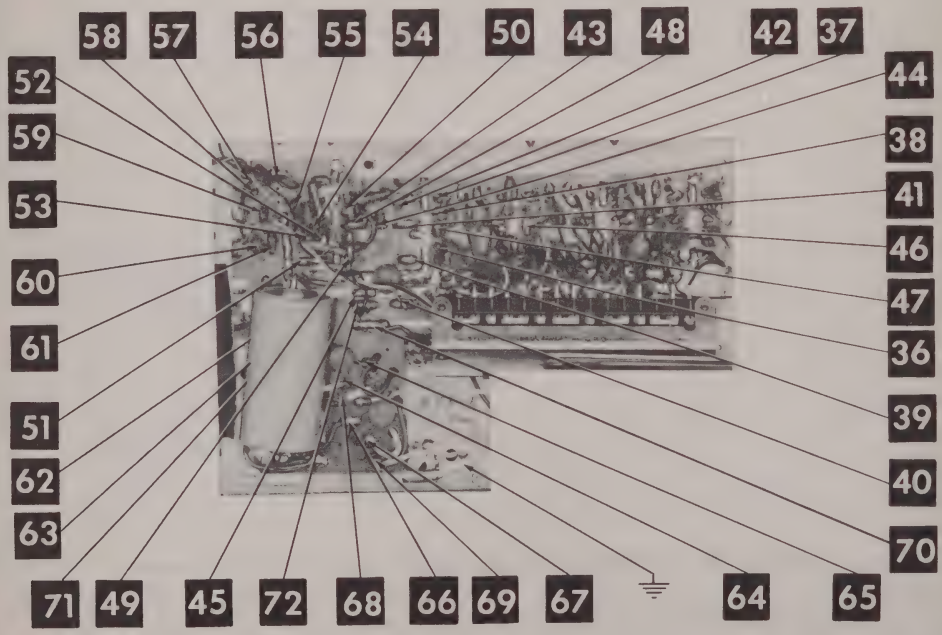

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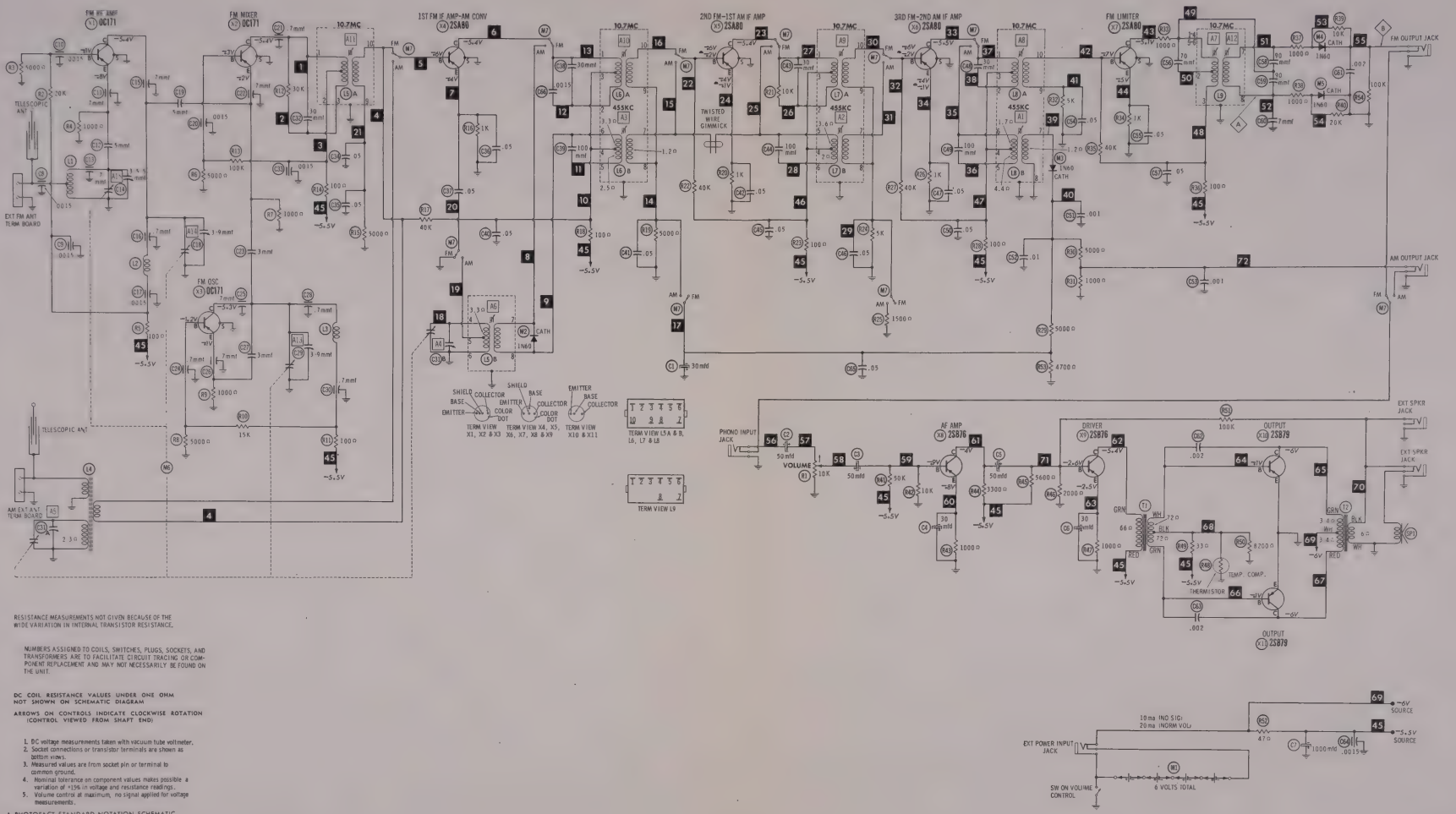

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±5% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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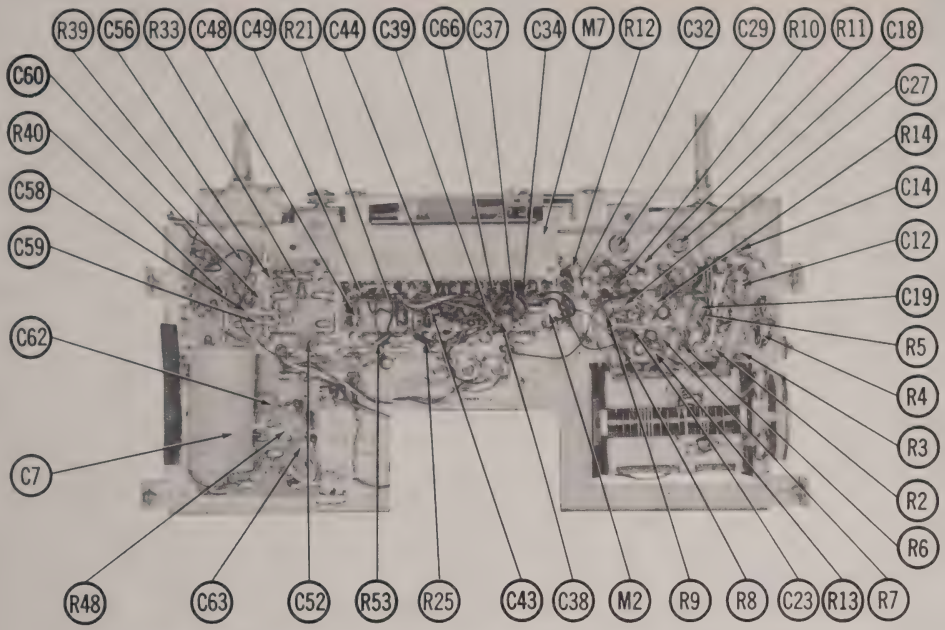
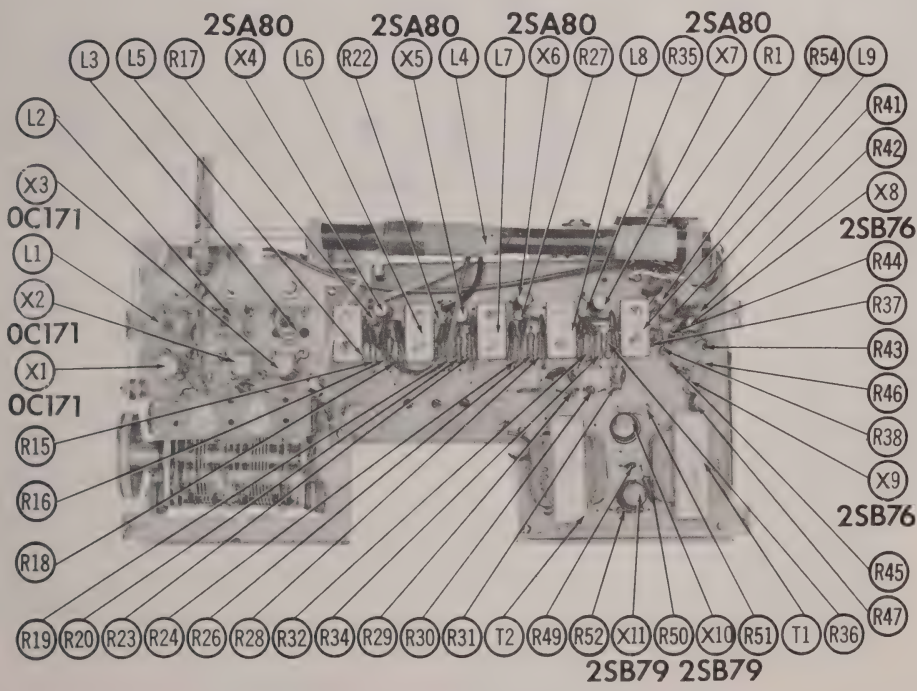
KOWA
MODEL KTF-1



CHASSIS BOTTOM VIEW-CAPACITOR & MISC. IDENT.



CHASSIS TOP VIEW-RESISTOR, INDUCTOR & TRANSISTOR IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.
Suggested Alignment Tools: A1, A2, A3, A6 thru A11.....GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538
A4, A5, A12, A13, A14..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528

AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400~ 30% AM)	(AM) Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1600KC	1600KC	"	A4, A5	"
3.	"	600KC	600KC	"	A6	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	High side thru .001mfd to external FM antenna terminal. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe thru 1meg to point Ⓐ Common to chassis.	A7, A8, A9, A10, A11	Adjust for maximum output.
5.	"	"	"	DC probe to point Ⓑ. Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE — SELECTOR IN FM POSITION

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawoooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	High side thru .001mfd to external FM antenna terminal. Low side to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. thru 47K to point Ⓐ. Low side to chassis.	A7, A8, A9, A10, A11	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
5.	"	"	"	Vert. amp. to point Ⓑ. Low side to chassis.	A12	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	Across FM antenna terminals with 150Ω in each lead.	108MC (Unmod.)	(FM) 108MC	DC probe thru 1meg to point Ⓐ Common to chassis.	A13, A14, A15	Adjust for maximum deflection.
7.	"	88MC	88MC	"	L3, L2, L1	Adjust for maximum deflection by expanding or compressing coil turns.

FIG. 1

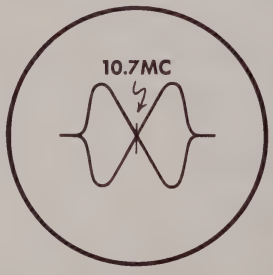


FIG. 2

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	OC171	FM RF Amplifier				PNP
X2	OC171	FM Mixer				PNP
X3	OC171	FM Oscillator				PNP
X4	2SA80	1st FM IF Amp. -AM Conv.				PNP
X5	2SA80	2nd FM-1st AM IF Amp.				PNP
X6	2SA80	3rd FM-2nd AM IF Amp.				PNP
X7	2SA80	FM Limiter				PNP
X8	2SB76	AF Amplifier				PNP
X9	2SB76	Driver				PNP
X10	2SB79	Output				PNP
X11	2SB79	Output				PNP

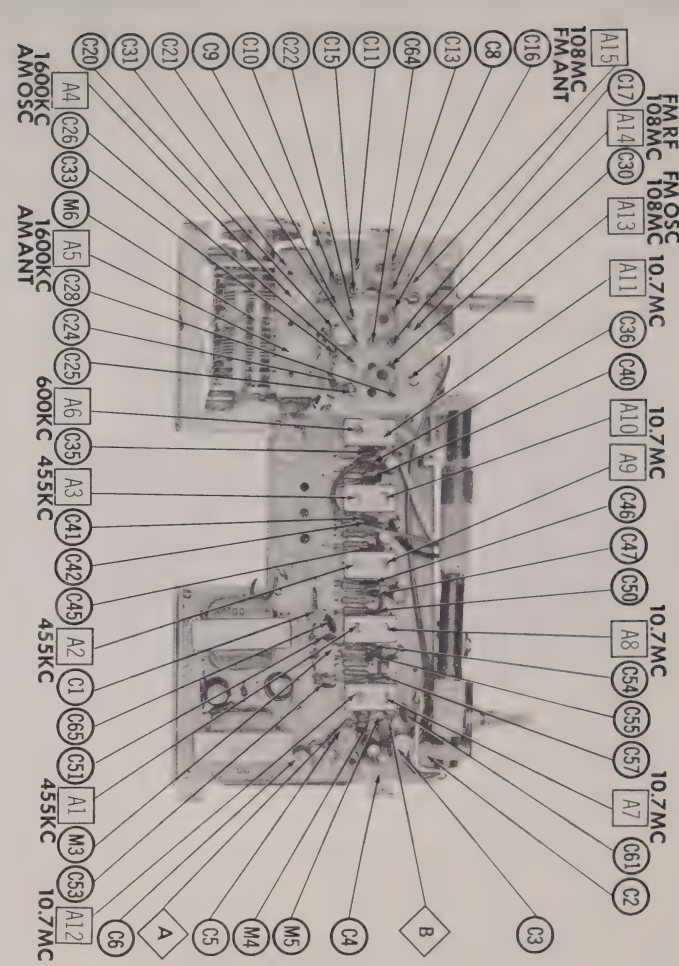
ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	KOWA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	30	3		PTT10	NLW30-6	TT6X30	MLV30-6	TE-1092	
C2	50	6		PTT29	NLW50-6	TT6X50	MLV50-6	TE-1100	
C3	50	6		PTT29	NLW50-6	TT6X50	MLV50-6	TE-1100	
C4	30	3		PTT10	NLW30-6	TT6X30	MLV30-6	TE-1092	
C5	50	6		PTT29	NLW50-6	TT6X50	MLV50-6	TE-1100	
C6	30	3		PTT10	NLW30-6	TT6X30	MLV30-6	TE-1092	
C7	1000	10		PRS1295	BR10001	TC1501	TD-1000-15	TVA-1133	

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	.0015							
C9	.0015							
C10	.0015							
C11	.7mmf							
C12	5		NPO-SI 5.0	TCZ-4R7	C10V5C	CCTO-050	CNO-550	10TCC-V50
C13	.7mmf							
C14	3.5-5							
C15	.7mmf							
C16	.7mmf							
C17	.0015							
C18	3-9							
C19	5		NPO-SI 5.0	TCZ-4R7	C10V5C	CCTO-050	CNO-550	10TCC-V50
C20	.0015							
C21	.7mmf							
C22	.7mmf							
C23	3		NPO-SI 3.0	TCZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C24	.7mmf							
C25	.7mmf							
C26	.7mmf							
C27	3		NPO-SI 3.0	TCZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C28	.7mmf							
C29	3-9							
C30	.7mmf							
C31A B								
C32	30		SI 30	D6-330	L10Q3	CCD-300	GP430	10TS-Q30
C33	.0015							
C34	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C35	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C36	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C37	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C38	30		SI 30	D6-330	L10Q3	CCD-300	GP430	10TS-Q30
C39	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C40	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C41	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C42	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C43	30		SI 30	D6-330	L10Q3	CCD-300	GP430	10TS-Q30

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C44	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C45	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C46	.05		BPD-05	DD-503	H-05S5		GP150	5HK S50
C47	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C48	30		SI 30	D6-330	L10Q3	CCD-300	GP430	10TS-Q30
C49	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C50	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C51	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C52	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C53	.001		BPD-001	DD-102	BYA10S1	CCD-102	B-210	5HK-D10
C54	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C55	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C56	70		SI 68	D6-680	L10Q68	CCD-680	GP468	10TS-Q68
C57	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C58	90		SI 91	D6-910	L10Q91	CCD-910	GP491	10TS-Q91
C59	90		SI 91	D6-910	L10Q91	CCD-910	GP491	10TS-Q91
C60	7		NPO-SI 6.8	TCZ-6R8	L10V7	CCTO-6R8	CNO-568	10TS-V75
C61	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C62	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C63	.002		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C64	.0015							
C65	.05		BPD-05	DD-503	H-05S5		GP150	5HK-S50
C66	.0015		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK D15

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	KOWA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	10K	1/4						Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	20K			
R3	5000Ω			
R4	1000Ω			
R5	100Ω			
R6	5000Ω			
R7	1000Ω			
R8	5000Ω			
R9	1000Ω			
R10	15K			
R11	100Ω			
R12	30K			
R13	100K			
R14	100Ω			
R15	5000Ω			
R16	1000Ω			
R17	40K			
R18	100Ω			
R19	5000Ω			
R20	1000Ω			
R21	10K			
R22	40K			
R23	100Ω			
R24	5000Ω			
R25	1500Ω			
R26	1000Ω			
R27	40K			
R28	100Ω			

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R29	5000Ω			
R30	5000Ω			
R31	1000Ω			
R32	5000Ω			
R33	1000Ω			
R34	1000Ω			
R35	40K			
R36	100Ω			
R37	1000Ω			
R38	1000Ω			
R39	10K			
R40	20K			
R41	50K			
R42	10K			
R43	1000Ω			
R44	2200Ω			
R45	5600Ω			
R46	2000Ω			
R47	1000Ω			
R48	Temp. Comp.			
R49	33Ω			
R50	8200Ω			
R51	100K			
R52	47Ω			
R53	4700Ω			
R54	100K			

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		KOWA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	FM Ant.						
L2	FM RF						
L3	FM Osc.						
L4	Loopstick						
L5A	1st FM IF						
B	AM Osc.						
L6A	2nd FM IF						
B	1st AM IF						
L7A	3rd FM IF						
B	2nd AM IF						
L8A	4th FM IF						
B	3rd AM IF						
L9	Discriminator						

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	KOWA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.5	1	FA-314					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	KOWA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	20Ω CT	6-8Ω	FA-315					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	KOWA PART No.	QUAM PART No.	
SP1	4"x 6"	PM	6-8Ω		46A1Z8	

BATTERIES

ITEM No.	VOLTAGE	KOWA PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.5V			130		635		M-14R	4 Required

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		KOWA PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N60		1N60	1N60	1N60	AM Overload
M3	1N60		1N60	1N60	1N60	AM Detector
M4	1N60		1N60	1N60	1N60	Discriminator
M5	1N60		1N60	1N60	1N60	Discriminator

MISCELLANEOUS

ITEM No.	PART NAME	KOWA PART No.	NOTES
M6	Tuning Gang		FM-AM, 5 Gang
M7	Switch		FM-AM (Slide Type)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

PHOTOFACT® Folder with CIRCUITRACE®

MAGNAVOX CHASSIS 59-11-00, 59-12-00, 59-14-00, 86-01-00, 86-01-10, 86-02-00, 86-02-10, 86-03-00, 86-03-10

MAGNAVOX CHASSIS 59-11-00, 59-12-00, 59-14-00, 86-01-00, 86-01-10, 86-02-00, 86-02-10, 86-03-00, 86-03-10

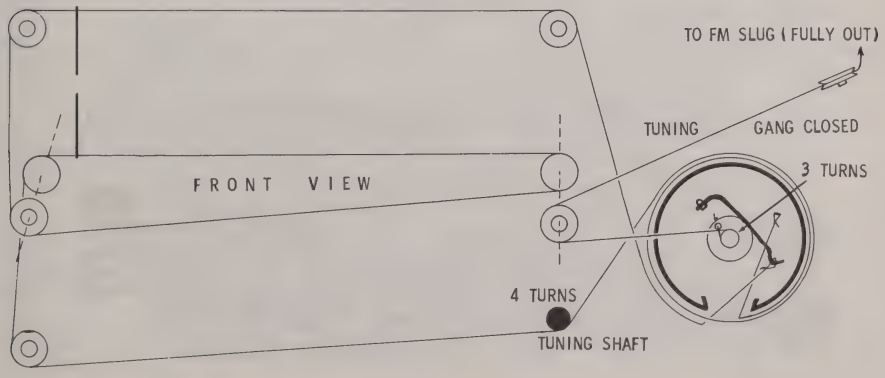
REPRESENTATIVE MODEL USING
CHASSIS 59-11-00 & 86-01-00

MAGNAVOX CHASSIS 59-11-00, 59-12-00, 59-14-00, 86-01-00, 86-01-10, 86-02-00, 86-02-10, 86-03-00, 86-03-10

TRADE NAME	Magnavox Chassis 59-11-00, 59-12-00, 59-14-00 (Amp); 86-01-00, 86-01-10, 86-02-00, 86-02-10, 86-03-00, 86-03-10 (Tuner)		
MANUFACTURER	The Magnavox Co., 2131 Bueter Road, Fort Wayne 4, Indiana		
TYPE SET	AC Operated 5 Tube FM-AM Tuner, 4 Tube Stereo Amplifier and 4 Speed Automatic Record Changer		
POWER SUPPLY	110 – 120 Volts AC, 60 Cycles	RATING	70 Watts, .65 Amp. @117 Volts AC (Less Motor)
TUNING RANGE—BROADCAST	540 – 1620KC	FREQ. MOD.	88 – 108MC

FOR SERVICE INFORMATION ON RECORD CHANGER – SEE SIMILIAR B.S.R. UA-12 – PHOTOFACT SET 465 FOLDER 6

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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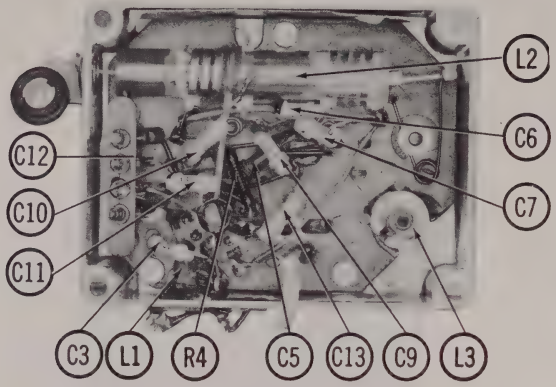
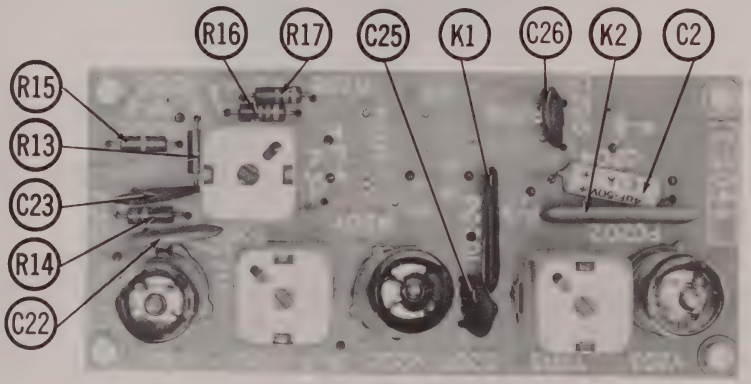
KN653

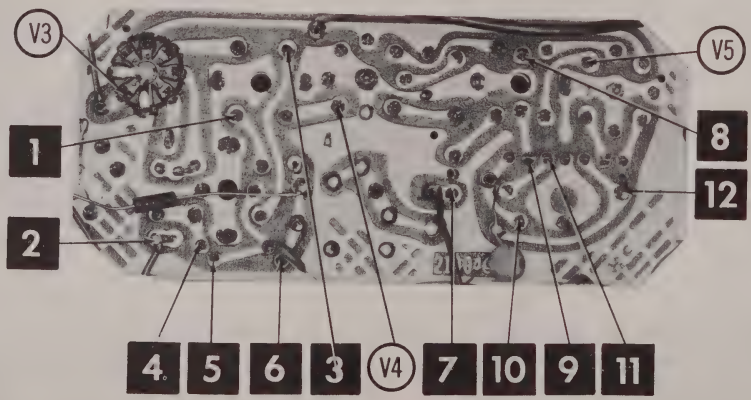
SET 550 FOLDER 10



FM RF SUBCHASSIS



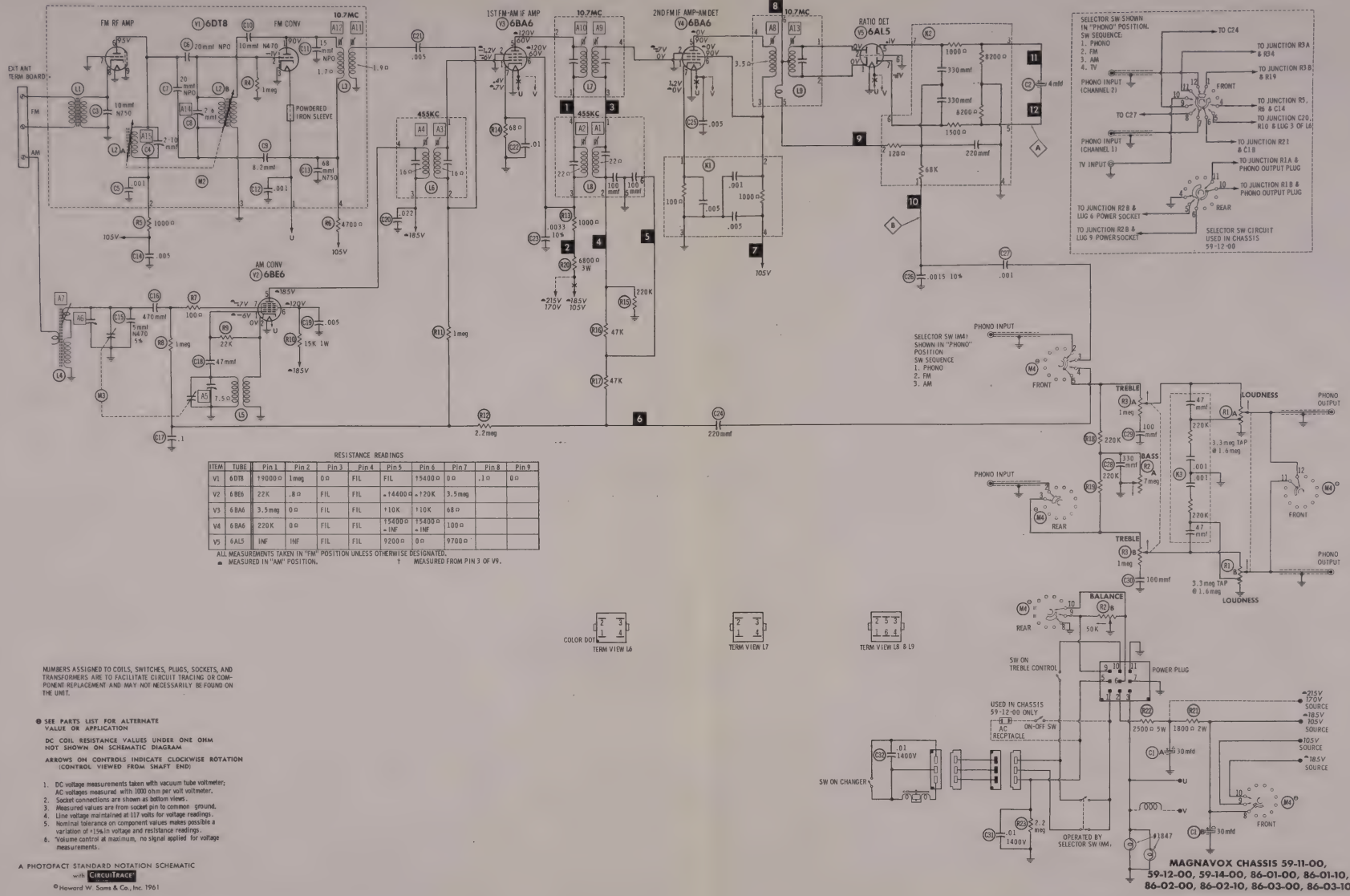
PRINTED BOARD



A Howard W. Sams CIRCUITRACE Photo

PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6DT8	†9000Ω	1meg	0Ω	FIL	FIL	†5400Ω	0Ω	.1Ω	0Ω
V2	6BE6	22K	.8Ω	FIL	FIL	▲†4400Ω	▲†20K	3.5meg		
V3	6BA6	3.5meg	0Ω	FIL	FIL	†10K	†10K	68Ω		
V4	6BA6	220K	0Ω	FIL	FIL	†5400Ω = INF	†5400Ω = INF	100Ω		
V5	6AL5	INF	INF	FIL	FIL	9200Ω	0Ω	9700Ω		

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
▲ MEASURED IN "AM" POSITION. † MEASURED FROM PIN 3 OF V9.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. *Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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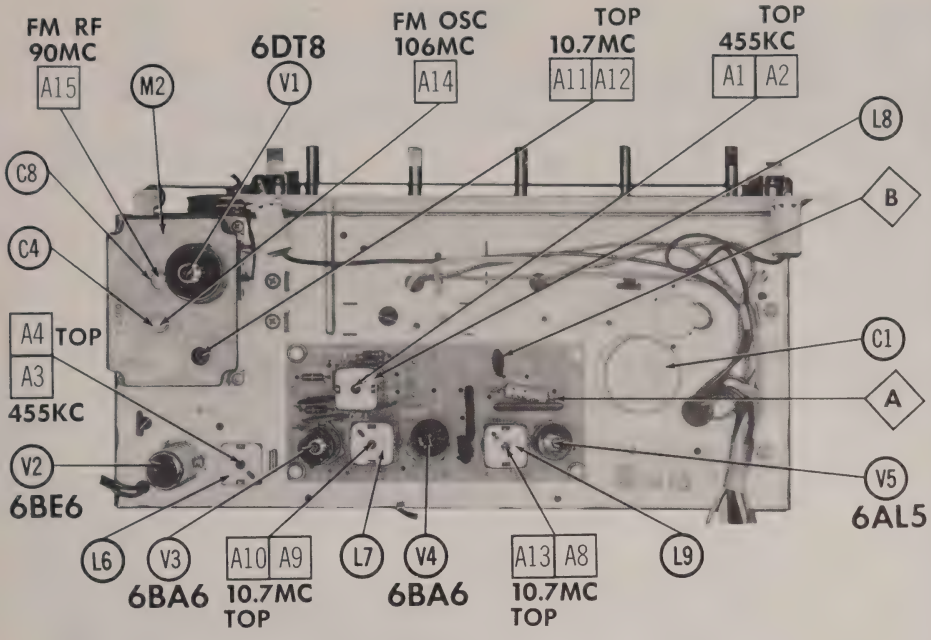
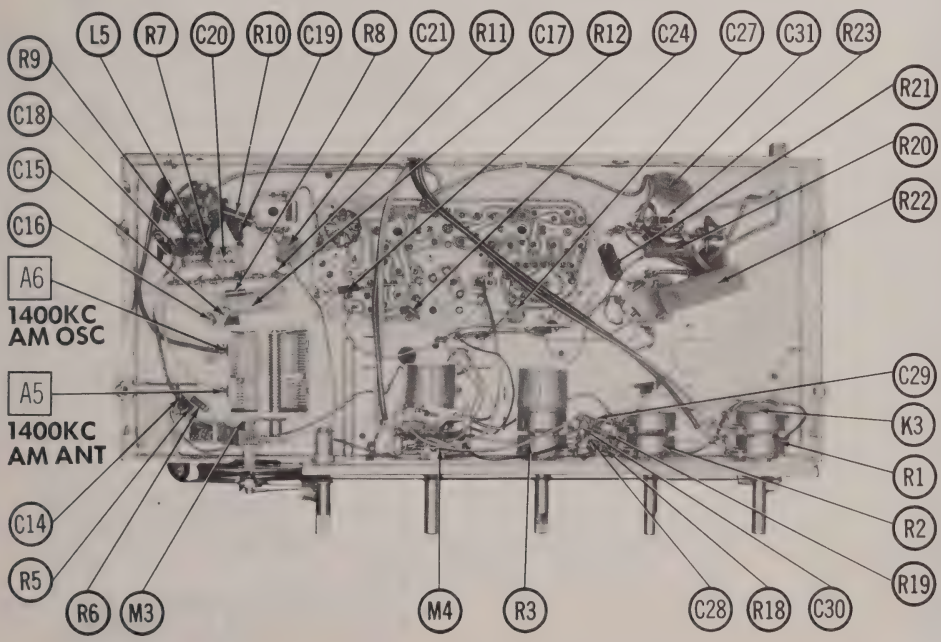
MAGNAVOX CHASSIS 59-11-00, 59-12-00, 59-14-00, 86-01-00, 86-01-10, 86-02-00, 86-02-10, 86-03-00, 86-03-10

TUNER SCHEMATIC



TUNER CHASSIS - TOP VIEW



TUNER CHASSIS - BOTTOM VIEW

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

A1 thru A4, A8, A9, A10, A13..	GENERAL CEMENT #5097, 8727 WALSCO #2515
A5, A6.....	GENERAL CEMENT #5004, 5008, 5009 WALSCO #2520
A11, A12.....	GENERAL CEMENT #9440
A14, A15.....	GENERAL CEMENT #5000, 5003, 8276, 8290 WALSCO #2512, 2515, 2522, 2523, 2525, 2537

AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 7 (grid) of AM Converter. Low side to chassis.	455KC (400~ 30% AM)	(AM) Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	High side to AM antenna terminal. Low side to chassis.	1400KC	1400KC	"	A5, A6	"
3.	"	600KC	600KC	"	A7	Adjust for maximum output. Repeat Steps 2 and 3.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	Across FM antenna terminals.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point Ⓐ. Common to chassis.	A8, A9, A10, A11, A12	Adjust for maximum deflection.
5.	"	"	"	DC probe to point Ⓑ. Common to chassis.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60~ modulation and 450KC sweep. Use 120~ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	Across FM antenna terminals.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. to point Ⓐ. Low side to chassis.	A8, A9, A10, A11, A12	Disconnect stabilizing capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C2.
5.	"	"	"	Vert. amp. to point Ⓑ. Low side to chassis.	A13	Adjust to place marker at the center of of crossover lines similar to Fig. 2. SLIGHTLY retouch A8 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT — SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	Across FM antenna terminals with 120Ω in each lead.	106MC (Unmod.)	(FM) 106MC	DC probe to point Ⓐ. Common to chassis.	A14	Adjust for maximum deflection.
7.	"	90MC	90MC	"	A15	"

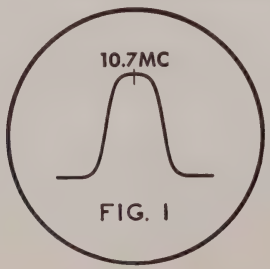


FIG. 1

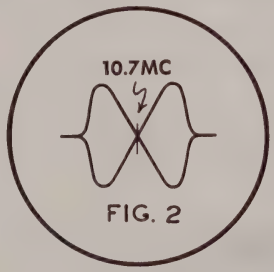


FIG. 2

TUNER PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	GENERAL ELECTRIC • RAYTHEON • SYLVANIA • TYPE
V1	FM RF Amp. -FM Conv.	6DT8
V2	AM Converter	6BE6
V3	1st FM-AM IF Amp.	6BA6
V4	2nd FM IF Amp. -AM Det.	6BA6
V5	Ratio Detector	6AL5

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	MAGNAVOX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲30	450	270021-58	AFH2-54	B0430	FP237	TMD-2640	TVL-2759	
B	▲30	450							
C2	4	50	270559-9	PTT90	NLW4-50	TT50X4	MLV5-50	TE-1302.1	

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	10 N750		N750-SI 10	TCN-10	C10Q1U	CCTN-100	CN7-410	10TCC-Q10
C4	2-10	#250306-1						
C5	.001		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C6	20 NPO		NPO-SI 20	TCZ-20	C10Q20C	CCTO-200	CNO-422	10TCC-Q20
C7	20 NPO		NPO-SI 20	TCZ-20	C10Q20C	CCTO-200	CNO-422	10TCC-Q20
C8	2-6	#250307-1						
C9	8.2 P100					*		
C10	10 N470					*		
C11	15 NPO		NPO-SI 15	TCZ-15	C10Q15C	CCTO-150	CNO-415	10TCC-Q15
C12	.001		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C13	68 N750		N750-SI 68	TCN-68	C10Q68U	CCTN-680	CN7-468	10TCU-Q68
C14	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C15	5 N470 5%					*		
C16	470		DI-470	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C17	.1 100V		P288N-1	DF-104	CUB2P1	DP-2-104	GEM-201	2TM-P10
C18	47		DI-47	DD-470	L10Q47	CCD-470	GP447	10TS-Q47
C19	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C20	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C21	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	.0033 10%		DI-3300		PM6D33	CCD-332	JL-233	10TS-D33
C24	220		DI-220	DD-221	L10T22	CCD-221	B-322	10TS-T22
C25	.005		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C26	.0015 10%		DI-1500	DD-152	PM6D15	CCD-152	GP215	10TS-D15
C27	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C28	330		DI-330	DD-331	L10T33	CCD-331	B-333	10TS-T33
C29	100		DI-100	DD-101	L10T1	CCD-101	GP310	10TS-T10
C30	100		DI-100	DD-101	L10T1	CCD-101	GP310	10TS-T10
C31	.01 1400V		DAC-27	DDI6-103	HVE16S1	16DP-3-103	UAC-110	BL-S10
C32	.01 1400V		DAC-27	DDI6-103	HVE16S1	16DP-3-103	UAC-110	BL-S10

Magnavox Part Number.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	MAGNAVOX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	3.3meg	1/2	220151-33	BT-180			FA36DT155	Loudness, Channel 1
	1.6meg Tap			*			*	
B	3.3meg	1/2		STR-180			RU36DT155	Loudness, Channel 2
	1.6meg Tap			*			*	
C	Shaft			Not Req.			CS3500	
R2A	7meg	1/2	220165-1					Bass
B	50K	1/2						Balance
R3A	1meg		220150-10	B-69	AD47-1meg-B		FA16L	Treble, Channel 1
B	1meg			SR-69	Not Req.		RU16L	Treble, Channel 2
C	Shaft			Not Req.	FS-3		CS3500	

* Use 1.5meg.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	REPLACEMENT DATA WORKMAN TV PART No.	REPLACEMENT DATA REMARKS
R4	1meg			
R5	1000Ω			
R6	4700Ω			
R7	100Ω			
R8	1meg			
R9	22K			
R10	15K 1W			
R11	1meg			
R12	2.2meg			
R13	1000Ω			
R14	68Ω			
R15	220K			
R16	47K			
R17	47K			
R18	220K			
R19	220K			
R20	6800Ω 3W	PW3-6800	3G-6800	
R21	1800Ω 2W			
R22	2500Ω 5W	PW5-2500	5W-SQ-2500	
R23	2.2meg			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	MAGNAVOX PART No.	REPLACEMENT DATA
K1	FM IF Filter	.001mfd, .005mfd, .005mfd, 100Ω, 100Ω	250330-1	
K2	FM Ratio Detector Comp.	220mmf, 330mmf, 330mmf, 120Ω, 1000Ω, 1500Ω, 8200Ω, 8200Ω, 68K	250254-2	Centralab PC-354
K3	Loudness Comp.	47mmf, 47mmf, .001mfd, .001mfd, 220K, 220K	250362-2	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA MAGNAVOX PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L1	FM Ant.	360789-1					
L2A	FM RF	360791-1					
B	FM Osc.						
L3	1st FM IF	360790-1					
L4	Loopstick	360782-2	BC-419	705-A		T523	
L5	AM Osc.	360702-1	BC-397	70-C6C	RTC-8647	T502	
L6	1st AM IF	360611-1	BC-352	12-C1	RTC-8632	T607	
L7	2nd FM IF	360747-1	FM-256	1463-PC	RTC-8646	T654	
L8	2nd AM IF	360781-1	BC-329	13-PC6	RTC-8643	T657	
L9	Ratio Detector	360748-1	FM-257	1465-PC	RTC-8653	T659	

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	MAGNAVOX PART No. CARTRIDGE	MAGNAVOX PART No. NEEDLE*	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE*	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE*	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE*	NOTES
M1			17	Not Req.	26S	2604 * 2605 *	8TA4-S	N-8TA-S *	

MISCELLANEOUS

ITEM No.	PART NAME	MAGNAVOX PART No.	NOTES
M2	Tuner	706771-2	FM, Complete
M3	Tuning Cap.	260154-1	2 Gang, Ant. 4-346mmf, Osc. 5-75mmf
M4	Switch	160334-4	Band Selector (Chassis 59-11, 59-14)
	Switch	160339-1	Band Selector (Chassis 59-12)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

AMP PARTS LIST AND DESCRIPTIONS

TUBES

◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V6	Channel 1 AF Amp. - Channel 2 AF Amp.	6EU7	V8	Channel 2 Output	6BQ5
V7	Channel 1 Output	6BQ5	V9	Rectifier	6CA4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MAGNAVOX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C33A	▲40	350	270021-85	AFH4-52	D0430	FP420, 36	TMQ-4244	TVL-4621.6	
B	■40	350							
C	▲20	300							
D	30	25							

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C34	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C36	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C37	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C38	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C39	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C40	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C41	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C42	.01 1400V		DAC-27	DD16-103	HVE16S1	16DP-3-103	UAC-110	BL-S10

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R24	6.8meg				R34	150K			
R25	470K				R35	820Ω			
R26	33K				R36	470Ω			
R27	150K				R37	100Ω 1W			
R28	820Ω				R38	6800Ω			
R29	470K				R39	4700Ω			
R30	6800Ω				R40	100Ω 2W			
R31	6.8meg				R41	100Ω			
R32	470K				R42	100Ω			
R33	33K								

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	MAGNAVOX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V@ .65A	460VCT @ .090A DC	6.3V@ 2.8A	300-188-1					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V@ 1.8A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MAGNAVOX PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5700Ω	3-4Ω	320082-2	A-3019	A-8092	26S49	S-5Z	
T3	5700Ω	3-4Ω	320082-2	A-3019	A-8092	26S49	S-5Z	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MAGNAVOX PART No.	QUAM PART No.	
SP1	12"	PM	3-4Ω	584045 *	12A31	* Alternate Part #584185-1
SP2	8"	PM	3-4Ω	584100 †	8A31	† Alternate Part #584170-1

CABINETS & CABINET PARTS

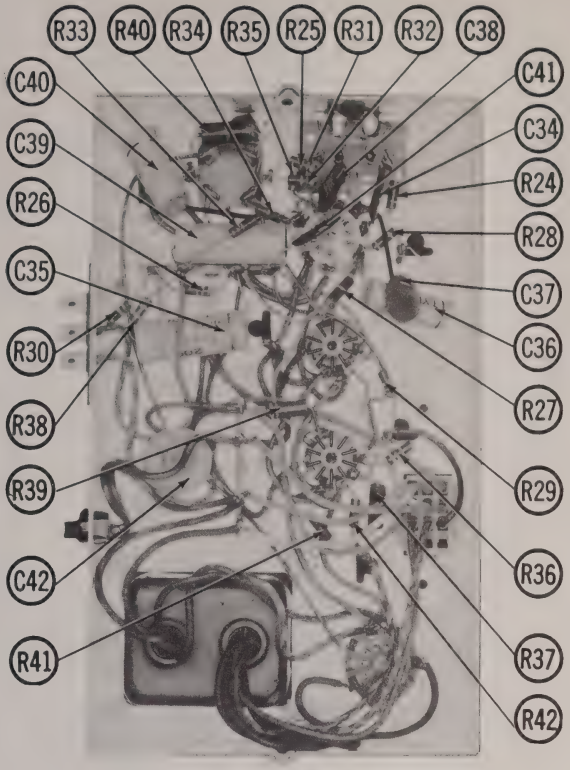
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial Glass	150586-4	Chassis 59-11
Dial Glass	150586-5	Chassis 59-12
Dial Glass	150586-3	Chassis 59-14

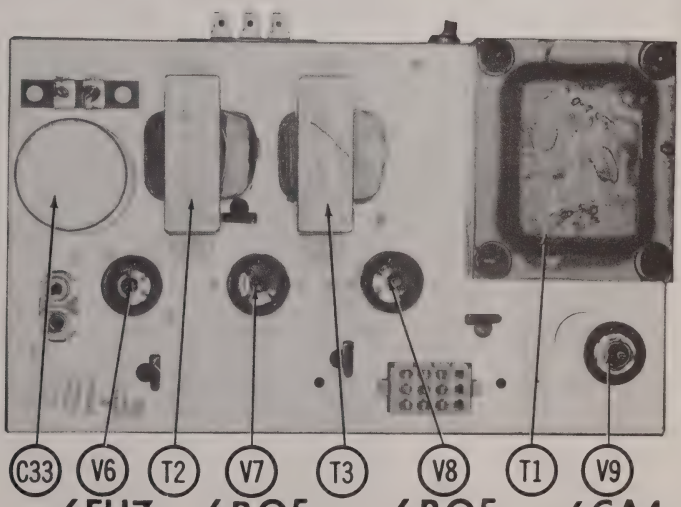
WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

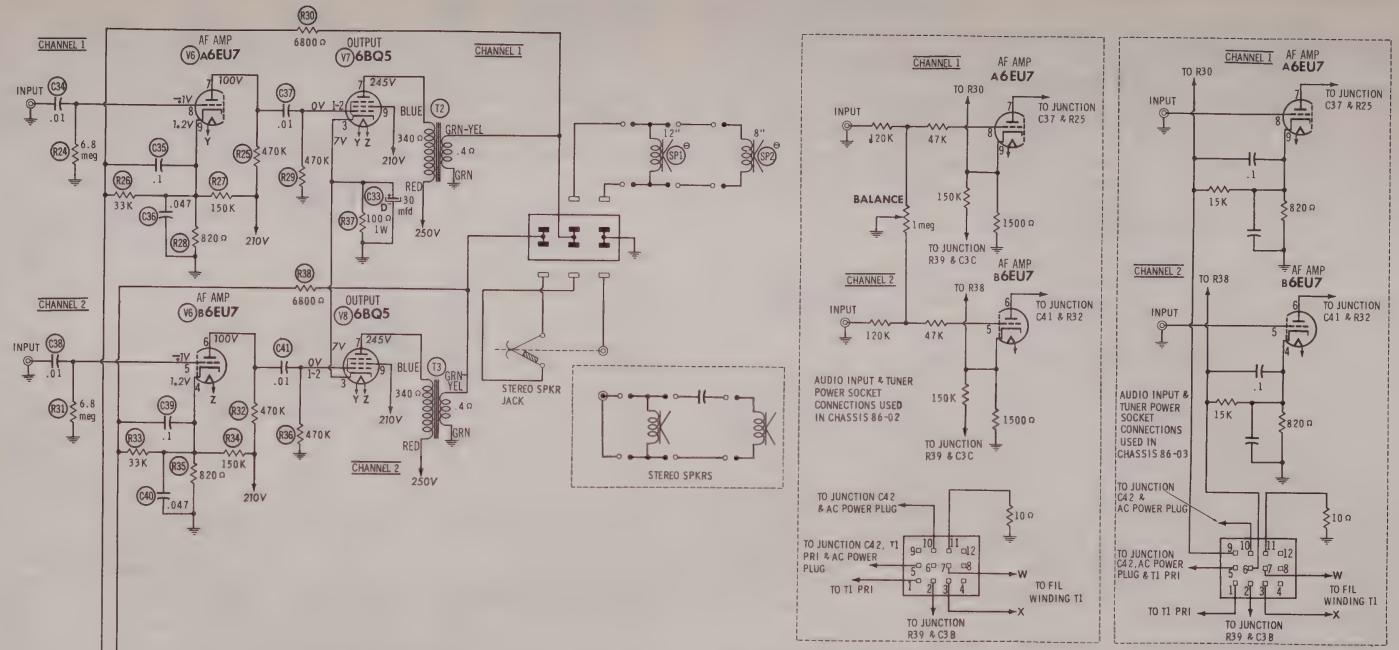
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



AMP CHASSIS - BOTTOM VIEW



AMP CHASSIS - TOP VIEW



⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. proper output load connected.

RESISTANCE READINGS (Cont.)

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V6	6EU7	FIL	FIL	NC	820Ω	6.8meg	†475K	†475K	6.8meg	820Ω
V7	6BQ5	NC	470K	100Ω	FIL	FIL	NC	†440Ω	NC	†4800Ω
V8	6BQ5	NC	470K	100Ω	FIL	FIL	NC	†440Ω	NC	†4800Ω
V9	6CA4	77Ω	NC	¶ INF	FIL	FIL	NC	82Ω		

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 3 OF V9.
NC NO CONNECTION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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MAGNAVOX CHASSIS 59-11-00, 59-12-00, 59-14-00, 86-01-00, 86-01-10, 86-02-00, 86-02-10, 86-03-00, 86-03-10

AMP SCHEMATIC

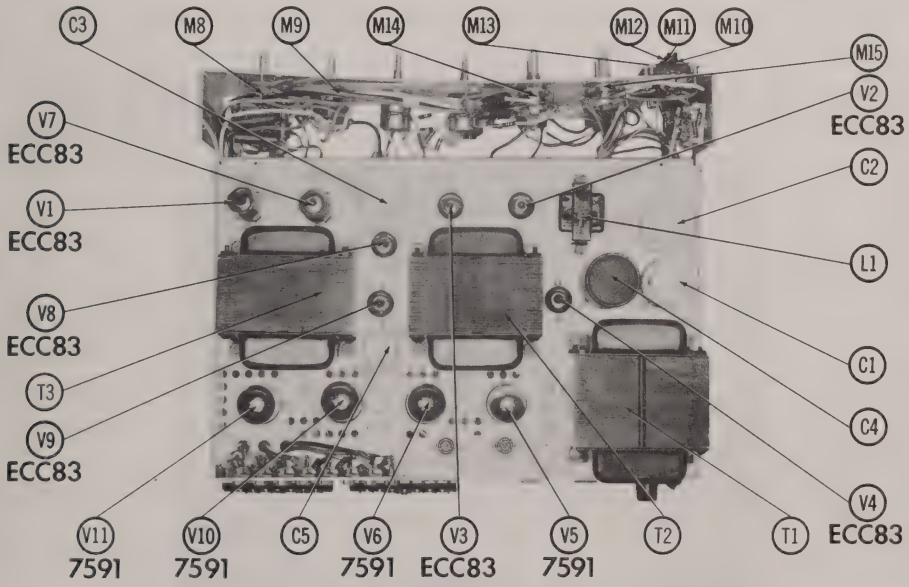
PHOTOFACT® Folder

**PILOT
MODEL 248**

PILOT
MODEL 248

PILOT
MODEL 248

TRADE NAME	Pilot Model 248
MANUFACTURER	Pilot Radio Corp., 37-06 36th Street, Long Island City 1, N. Y.
TYPE SET	AC Operated 11 Tube Stereo Amplifier
POWER SUPPLY	105 – 120 Volts AC, 60 Cycles RATING 140 Watts, 1.5 Amp. @117 Volts AC

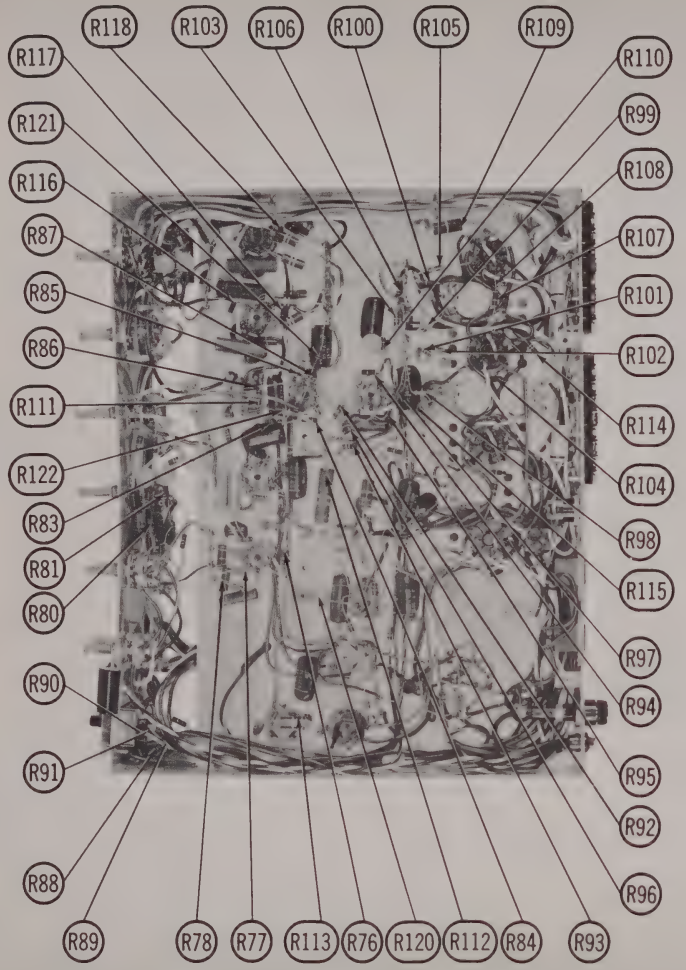


HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

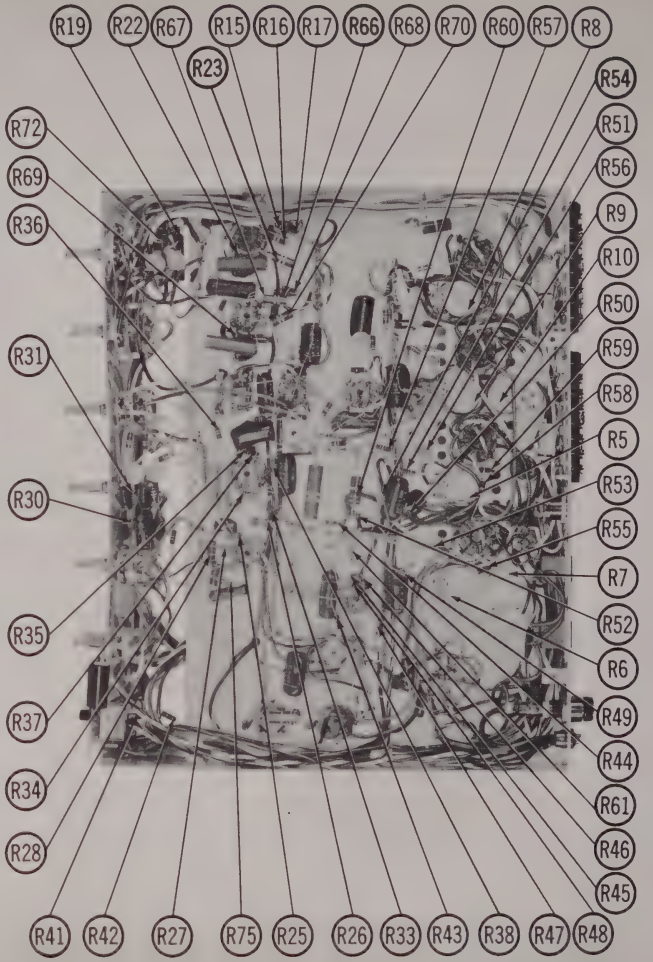
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KV710

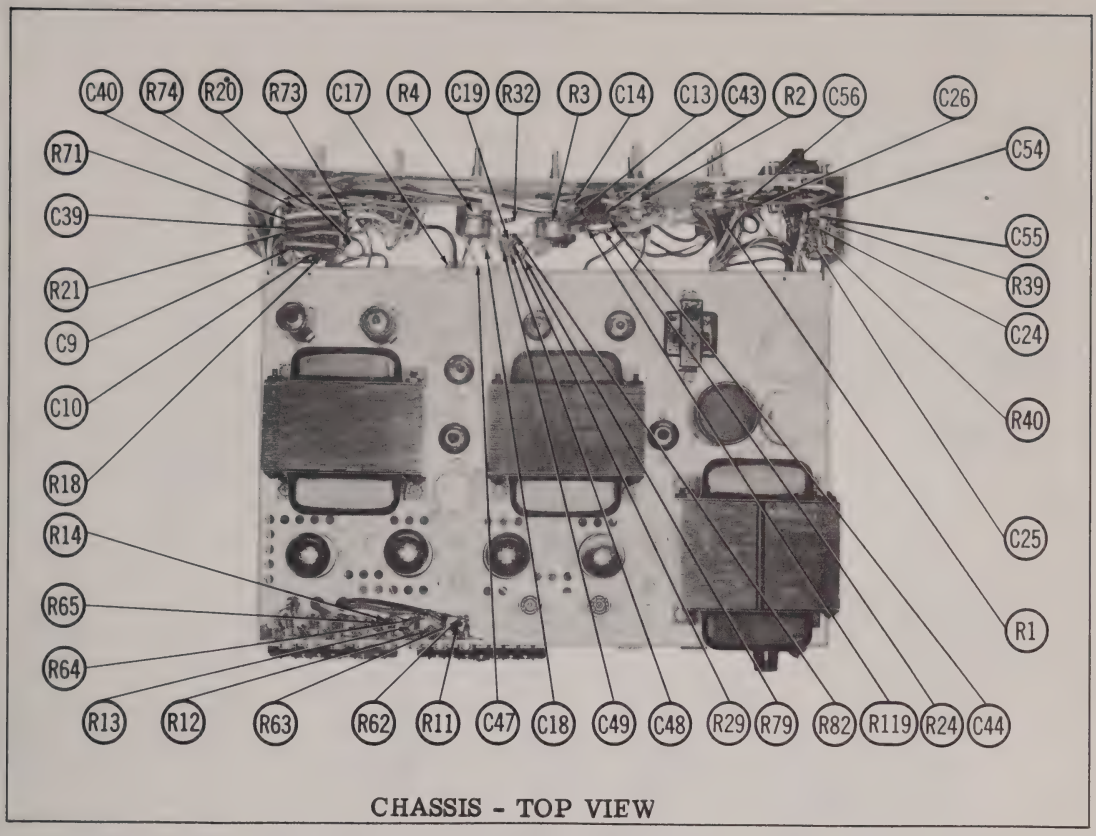
SET 550 FOLDER 11



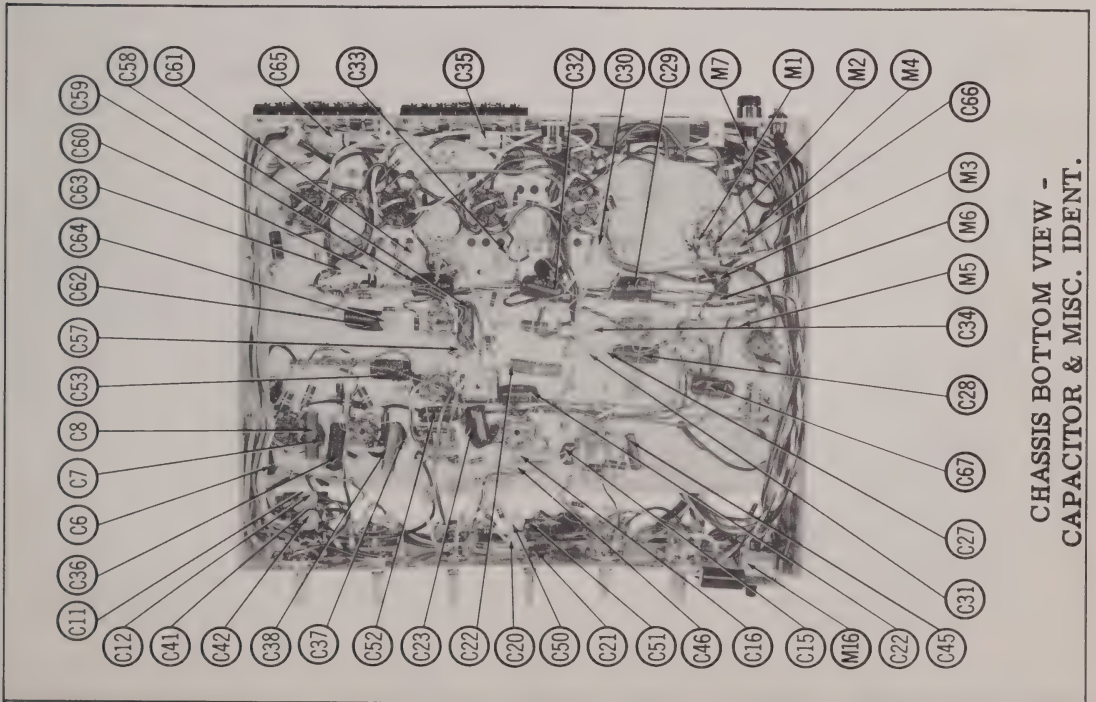
CHASSIS BOTTOM VIEW - RESISTOR, IDENT. (R76-R122)



CHASSIS BOTTOM VIEW - RESISTOR IDENT. (R5-R75)



CHASSIS - TOP VIEW



CHASSIS BOTTOM VIEW -
CAPACITOR & MISC. IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	GENERAL ELECTRIC • RAYTHEON • SYLVANIA • TYPE
V1	Channel A Preamp.	ECC83/12AX7(7025)*
V2	Channel A AF Amp. - Channel B AF Amp.	ECC83/12AX7
V3	Channel A AF Amp.	ECC83/12AX7
V4	Channel A AF Amp. - Phase Inverter	ECC83/12AX7
V5	Channel A Output	7591
V6	Channel A Output	7591
V7	Channel B Preamp.	ECC83/12AX7(7025)*
V8	Channel B AF Amp.	ECC83/12AX7
V9	Channel B AF Amp. - Phase Inverter	ECC83/12AX7
V10	Channel B Output	7591
V11	Channel B Output	7591

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA PILOT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	450	24-184	AFH3-45-40	A0510	FP149	TMS-1800	TVL-1735	
B	▲80	450			BR4045	TC78	TD-40-450	TVA-1712	
C2	80	450	24-183	AFH1-55	A0510	FP149	TMS-1800	TVL-1735	
C3A	▲20	350	24-174	AFH3-43-50	D0430	FP376.9	TMT-3745	TVL-3786	
B	▲40	350							
C	▲40	350						TVLPS-3232*	
C4A	▲1000	35	24-186						
B	▲100	35							
C	▲100	35							
C5	100	35	24-185	AFH1-21	XA0241	WP064	TMS-1130	TVL-1423	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C7	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C8	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C9	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C10	.0039 10%		DI-4000		PM6D4	CCD-392	JL-239	10TS-D39
C11	.001 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C12	.0015 10%		DI-1500	DD-152	PM6D15	CCD-152	GP215	10TS-D15
C13	.033 100V		P288N-033	DD-303	CUB6S33	1DP-1-333	GEM-4133	6TM-S33
C14	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C15	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411 *	4TM-S10
C16	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C17	150 N750 10%		N750-DI 150	DTN-150	C10T15U	CCTN-151	CN7-315	10TCU-T15
C18	1.5 10%	Note 1	NPO-SI 1.5	TCZ-1R5	C10V15C		CNO-515	10TCC-V15
C19	500 10%		DI-500	DD-501	PM6T5	CCD-501	GP350	10TS-T50
C20	.0015 10%		DI-1500	DD-152	PM6D15	CCD-152	GP215	10TS-D15
C21	.022 100V 10%		V84C2522-40%		PM4S22	1DP-1-223	GEM-4122	2TM-S22
C22	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C23	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C24	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C25	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C26	.0033 10%		DI-3300		PM6D33	CCD-332	JL-233	10TS-D33
C27	150 N750 10%		N750-DI 150	DTN-150	C10T15U	CCTN-151	CN7-315	10TCU-T15
C28	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C29	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C30	20 NPO 10%		NPO-DI 20	DTZ-20	C10Q2C	CCTO-200	CNO-422	10TCC-Q20
C31	30 N750 10%		N750-DI 33	DTN-30	C10Q3U	CCTN-330	CN7-433	10TCU-Q33
C32	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C33	30 N750 10%		N750-DI 33	DTN-30	C10Q3U	CCTN-330	CN7-433	10TCU-Q33
C34	150 N750 10%		N750-DI 150	DTN-150	C10T15U	CCTN-151	CN7-315	10TCU-T15
C35	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C36	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C37	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C38	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C39	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C40	.0039 10%		DI-4000		PM6D4	CCD-392	JL-239	10TS-D39
C41	.001 10%		DI-1000	DD-102	PM6D1	CCD-102	GP210	10TS-D10
C42	.0015 10%		DI-1500	DD-152	PM6D15	CCD-152	GP215	10TS-D15
C43	.033 100V		P288N-033	DD-303	CUB6S33	1DP-1-333	GEM-4133	6TM-S33
C44	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C45	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C46	.022 400V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C47	150 N750 10%		N750-DI 150	DTN-150	C10T15U	CCTN-151	CN7-315	10TCU-T15
C48	1.5 10%	Note 1	NPO-SI 1.5	TCZ-1R5	C10V15C		CNO-515	10TCC-V15
C49	500 10%		DI-500	DD-501	PM6T5	CCD-501	GP350	10TS-T50
C50	.0015 10%		DI-1500	DD-152	PM6D15	CCD-152	GP215	10TS-D15
C51	.022 100V 10%		P288N-022		PM4S22	1DP-1-223	GEM-4122	2TM-S22
C52	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C53	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C54	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C55	.01 400V		P488N-01	DE-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C56	.0033 10%		DI-3300		PM6D33	CCD-332	JL-233	10TS-D33
C57	150 N750 10%		N750-DI 150	DTN-150	C10T15U	CCTN-151	CN7-315	10TCU-T15
C58	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C59	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C60	20 NPO 10%		NPO-DI 20	DTZ-20	C10Q2C	CCTO-200	CNO-422	10TCC-Q20
C61	30 N750 10%		N750-DI 33	TCN-30	C10Q3U	CCTN-330	CN7-433	10TCU-Q33
C62	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C63	33 N750 10%		N750-DI 33	DTN-33	C10Q33U	CCTN-330	CN7-433	10TCU-Q33
C64	150 N750 10%		N750-DI 150	DTN-150	C10T15U	CCTN-151	CN7-315	10TCU-T15
C65	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C66	.01		BPD-01	DD-103	HYA1081	CCD-103	B-110	5HK-S10
C67	.25 100V		P288N-25		CUB2P25	1DP-3-254	GEM-2025	2TM-P25

Note 1. Not used in some versions.

CONTROLS

ITEM No.	RATING RESIST-ANCE	RATING WATTS	REPLACEMENT DATA PILOT PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	36-76				FA16T35	Volume, Channel A
	300K Tap	½						
B	1meg	½					RU16T35	Volume, Channel B
	300K Tap	½						
C	Shaft						CS3500	
R2A	1meg	½	39-57				FA16A	Balance, Channel A
B	1meg	½					RU16R	Balance, Channel B
C	Shaft						CS3500	
R3A	5meg	½	37-42					Bass, Channel A
B	5meg	½						Bass, Channel B
R4A	5meg	½	37-42					Treble, Channel A
B	5meg	½						Treble, Channel B
R5A	5meg	½	39-66	B-87	A47-5meg-S	Q11-141	U87	DC Balance, Channel A
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	
R6A	25K	½	39-64	B-25	A47-25K-S	Q11-120	U39	AC Balance, Channel A
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	
R7A	50K	½	39-65	B-31	A47-50K-S	Q11-123	U35	Bias Adj., Channel A
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	
R8A	5meg	½	39-66	B-87	A47-5meg-S	Q11-141	U87	DC Balance, Channel B
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	
R9A	25K	½	39-64	B-26	A47-25K-S	Q11-120	U39	AC Balance, Channel B
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	
R10A	50K	½	39-65	B-31	A47-50K-S	Q11-123	U35	Bias Adj., Channel B
B	Shaft			Not Req.	FKS-1/4	Not Req.	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R11	47K			
R12	47K			
R13	100K			
R14	1meg			
R15	1meg			
R16	82K 1W			
R17	2200Ω 1W			
R18	100K			
R19	27K			
R20	4.7meg			
R21	1.8meg			
R22	2.2meg			
R23	82K 1W			
R24	27K			
R25	1meg			
R26	82K 1W			
R27	1000Ω			
R28	1500Ω 1W			
R29	82K			
R30	10K			
R31	680K			
R32	100K			

RESISTORS (cont)

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R33	82K			
R34	3300Ω			
R35	1meg			
R36	82K			
R37	1200Ω			
R38	150K			
R39	180K			
R40	180K			
R41	220K			
R42	6800Ω			
R43	100K			
R44	15K			
R45	4700Ω			
R46	1meg			
R47	100K			
R48	1500Ω			
R49	82K			
R50	1.5meg			
R51	1.5meg			
R52	680K			
R53	1000Ω			
R54	270K			
R55	20Ω 5%			
R56	1000Ω			
R57	270K			
R58	82Ω			
R59	20Ω 5%			
R60	15Ω 2W			
R61	4700Ω			
R62	47K			
R63	47K			
R64	100K			
R65	1meg			
R66	1meg			
R67	82K 1W			
R68	2200Ω 1W			
R69	2.2meg			
R70	82K 1W			
R71	100K			
R72	27K			
R73	4.7meg			
R74	1.8meg			
R75	1meg			
R76	82K 1W			
R77	1000Ω			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R78	1500Ω 1W			
R79	82K			
R80	10K			
R81	680K			
R82	100K			
R83	82K			
R84	3300Ω			
R85	1meg			
R86	82K			
R87	1200Ω			
R88	180K			
R89	180K			
R90	220K			
R91	6800Ω			
R92	100K			
R93	15K			
R94	4700Ω			
R95	1meg			
R96	100K			
R97	1500Ω			
R98	82K			
R99	1.5meg			
R100	1.5meg			
R101	680K			
R102	1000Ω			
R103	270K			
R104	20Ω 5%			
R105	1000Ω			
R106	270K			
R107	82Ω			
R108	20Ω 5%			
R109	15Ω 2W			
R110	4700Ω			
R111	15K			
R112	12K 2W			
R113	6800Ω 2W			
R114	120K			
R115	3300Ω			
R116	330Ω			
R117	680Ω			
R118	680Ω			
R119	27K			
R120	2Ω 5W	PW5-21	5W-8Q-21	
R121	150K			
R122	22K 1W			

FILTER CHOKE

ITEM No.	RATINGS CURRENT (Measured)	RATINGS DC RES.	RATINGS INDUCTANCE (0 CURRENT 1000 ℃)	REPLACEMENT DATA PILOT PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L1	.200A	25Ω	250MH	57-18					

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	REPLACEMENT DATA PILOT PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V ⓐ 1.5A	300VⓐCT .430A AC	6.3VCT ⓐ 3A	55-79					
	SEC. 3	SEC. 4	SEC. 5						
	42VCT ⓐ .620A DC								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA PILOT PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	5400Ω CT	16Ω Tap ⓐ 8Ω, 4Ω	56-63					
T3	5400Ω CT	16Ω Tap ⓐ 8Ω, 4Ω	56-63					

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA PILOT PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.200A	110-635	1N1763	40H	SR500	
M2	.200A	110-635	1N1763	40H	SR500	
M3	.200A	110-635	1N1763	40H	SR500	
M4	.200A	110-635	1N1763	40H	SR500	
M5	.620A	110-636	1N1763	F4	SR500	
M6	.620A	110-636	1N1763	F4	SR500	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA PILOT PART No. FUSE	PILOT PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M7	3AG	2½A 125V S/B	111-12		31302.5 (3AG 2½A 125V S/B	342001	MDL 2½	* HKP

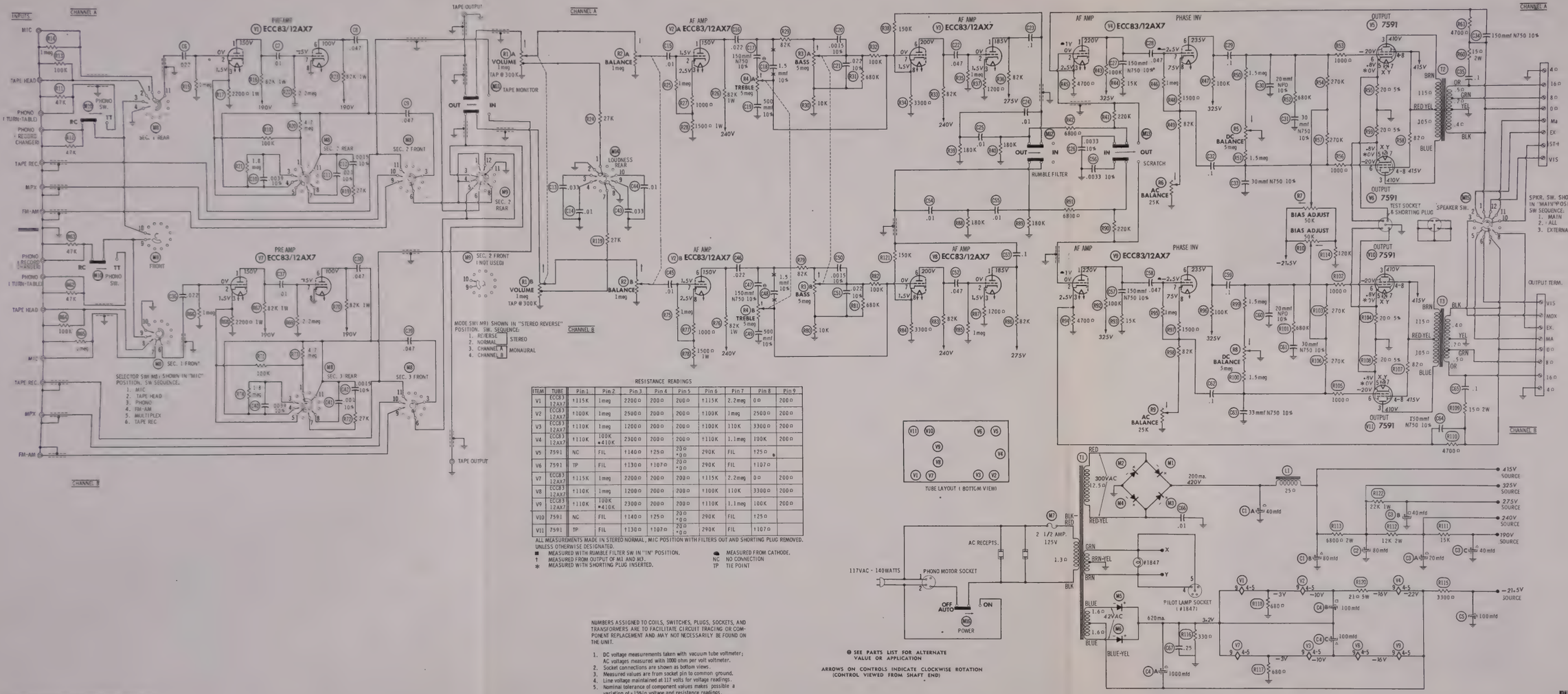
MISCELLANEOUS

ITEM No.	PART NAME	PILOT PART No.	NOTES
M8	Switch	100-163	Function Selector (Rotary Wafer Type)
M9	Switch	100-152	Mode Selector (Rotary Wafer Type)
M10	Switch	101-26	Phono Selector (DPDT Slide Type)
M11	Switch	101-26	Tape Monitor (DPDT Slide Type)
M12	Switch	101-36	Rumble Filter (DPDT Slide Type)
M13	Switch	101-26	Scratch Filter (DPDT Slide Type)
M14	Switch	100-164	Loudness (Rotary Wafer Type)
M15	Switch	100-165	Speakers (Rotary Wafer Type)
M16	Switch	101-47	Power Off-On (SPST Slide Type)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8534 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1735-B (6 Ft. Length)
1735-K (7½ Ft. Length)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC83 12AX7	†115K	1meg	2200Ω	200Ω	200Ω	†115K	2.2meg	0Ω	200Ω
V2	ECC83 12AX7	†100K	1meg	2500Ω	200Ω	200Ω	†100K	1meg	2500Ω	200Ω
V3	ECC83 12AX7	†110K	1meg	1200Ω	200Ω	200Ω	†100K	110K	3300Ω	200Ω
V4	ECC83 12AX7	†110K	100K ■410K	2300Ω	200Ω	200Ω	†110K	1.1meg	100K	200Ω
V5	7591	NC	FIL	†140Ω	†25Ω	20Ω *0Ω	290K	FIL	†25Ω	
V6	7591	TP	FIL	†130Ω	†107Ω	20Ω *0Ω	290K	FIL	†107Ω	
V7	ECC83 12AX7	†115K	1meg	2200Ω	200Ω	200Ω	†115K	2.2meg	0Ω	200Ω
V8	ECC83 12AX7	†110K	1meg	1200Ω	200Ω	200Ω	†100K	110K	3300Ω	200Ω
V9	ECC83 12AX7	†110K	100K ■410K	2300Ω	200Ω	200Ω	†110K	1.1meg	100K	200Ω
V10	7591	NC	FIL	†140Ω	†25Ω	20Ω *0Ω	290K	FIL	†25Ω	
V11	7591	TP	FIL	†130Ω	†107Ω	20Ω *0Ω	290K	FIL	†107Ω	

ALL MEASUREMENTS MADE IN STEREO NORMAL, MIC POSITION WITH FILTERS OUT AND SHORTING PLUG REMOVED. UNLESS OTHERWISE DESIGNATED.

■ MEASURED WITH RUMBLE FILTER SW IN "IN" POSITION.
† MEASURED FROM OUTPUT OF M1 AND M3.
* MEASURED WITH SHORTING PLUG INSERTED.
◓ MEASURED FROM CATHODE.
NC NO CONNECTION
TP TIE POINT

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

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PILOT
MODEL 248

PHOTOFACT® Folder

**REALISTIC
MODEL SAF-24**

REALISTIC
MODEL SAF-24

REALISTIC
MODEL SAF-24

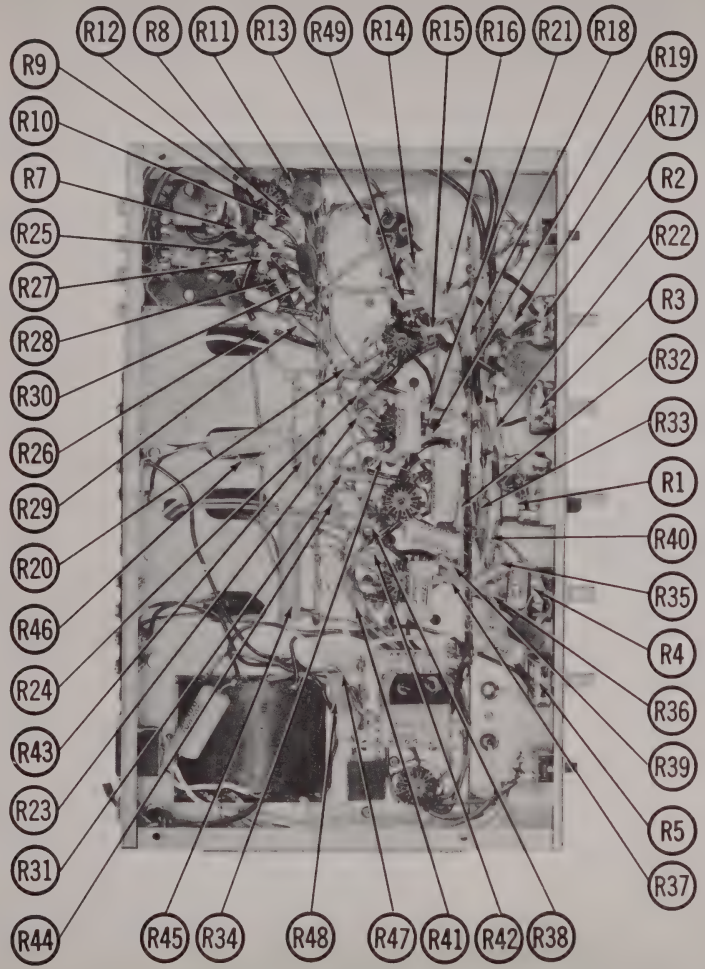
TRADE NAME	Realistic Model SAF-24
SUPPLIER	Radio Shack Corp., 730 Commonwealth Ave., Boston 17, Mass.
TYPE SET	AC Operated 7 Tube Stereo Amplifier
POWER SUPPLY	105 – 125 Volts AC, 50-60 Cycles RATING 85 Watts, .8 Amp. @117 Volts AC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

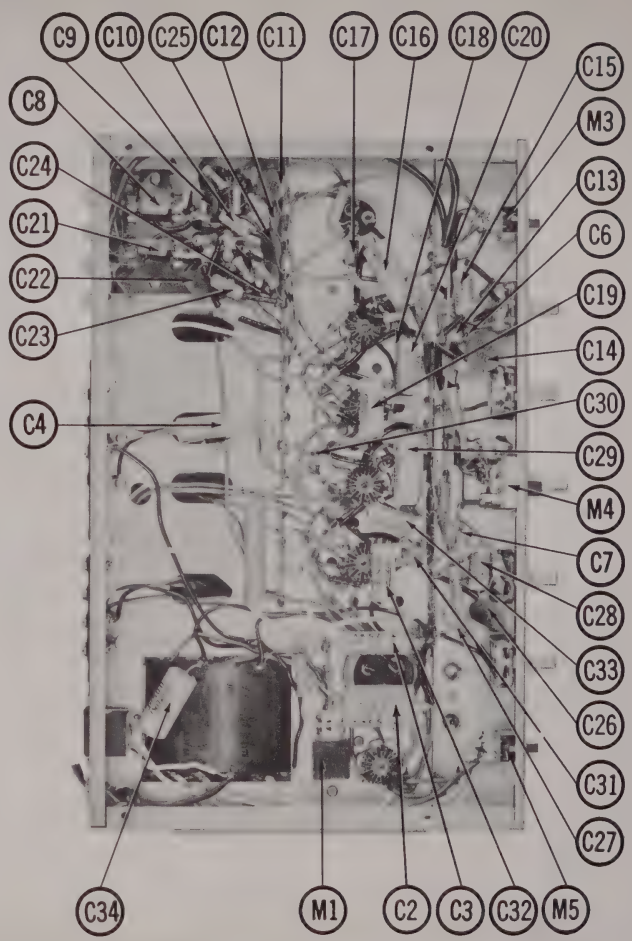
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KV702

SET 550 FOLDER 12



CHASSIS BOTTOM VIEW-RESISTOR IDENT.



CHASSIS BOTTOM VIEW
-CAPACITOR & MISC. IDENT.

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)

TUBES

ITEM No.	USE	TYPE
V1	Left Channel Preamp.	12AX7
V2	Left Channel AF Amp. - Left Channel Output	6BM8
V3	Left Channel Phase Inv. - Left Channel Output	6BM8
V4	Right Channel Preamp.	12AX7
V5	Right Channel AF Amp. - Right Channel Output	6BM8
V6	Right Channel Phase Inv. - Right Channel Output	6BM8
V7	Rectifier	6CA4

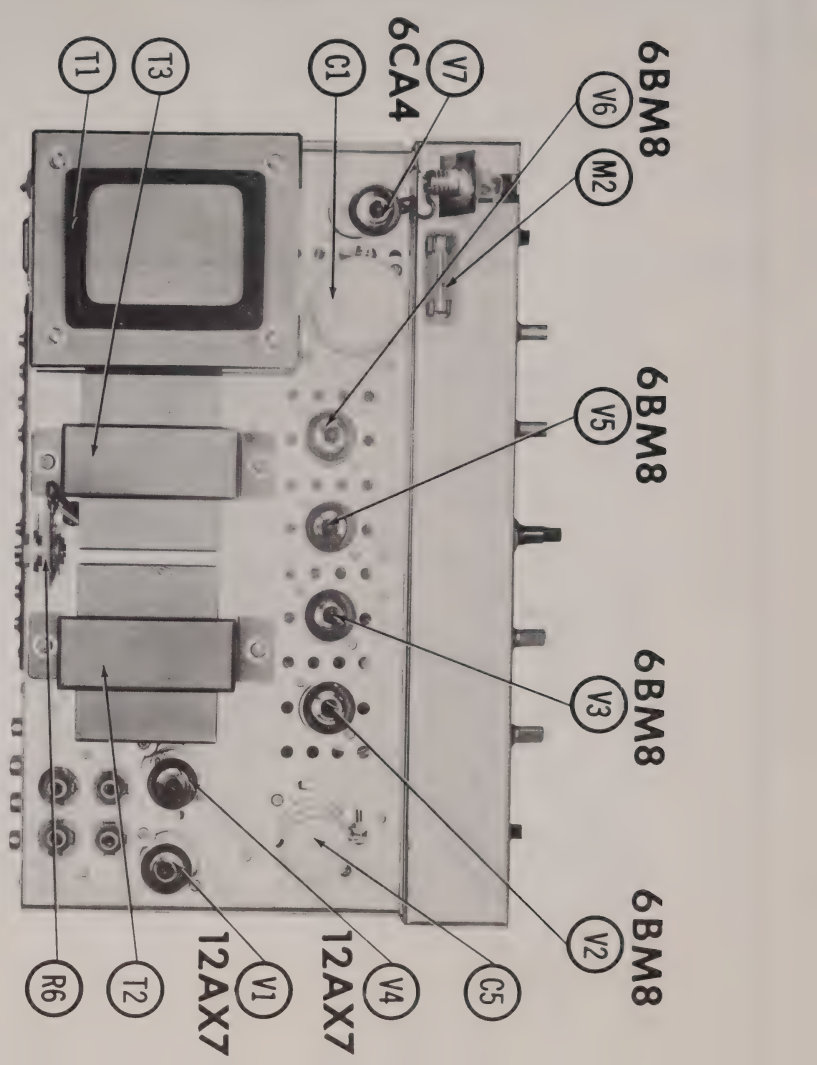
ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA REALISTIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	①40	300		AFH2-33	B0260	FP217, 87	TMD-2315	TVL-2575	
B	②40	300							
C2	50	50		PTT98	NLW50-50	TC39	MLV50-50	TE-1307	
C3	25	25		PTT82	NLW25-25	TT25X25	MLV25-25	TE-1207	
C4	25	25		PTT82	NLW25-25	TT25X25	MLV25-25	TE-1207	
C5A	①20	250		AFH2-26	B0210	FP217	TMD-2235	TVL-2515	
B	②20	250							
C6	25	25		PTT82	NLW25-25	TT25X25	MLV25-25	TE-1207	
C7	25	25		PTT82	NLW25-25	TT25X25	MLV25-25	TE-1207	

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C8	100		1468-0001	TCZ-100	5W5T1	CM-19B-101M	MC235	1FM-310
C9	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C10	.001 400V		P488N-001	D6-102	CUB6D1	6DP-1-102	GEM-621	6TM-D10
C11	200		1468-0002	TCZ-200	5W5T2	CM-19B-201M	MC237	1FM-320
C12	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C13	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S20
C14	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C15	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S20
C16	.5 150V		P288N-5		CUB2P5	2DP-5--504	B-110	2TM-P50
C17	100		1468-0001	TCZ-100	5W5T1	CM-19B-101M	MC235	1FM-310
C18	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C19	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C20	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C21	100		1468-0001	TCZ-100	5W5T1	CM-19B-101M	MC235	1FM-310
C22	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	.001 400V		P488N-001	D6-102	CUB6D1	6DP-1-102	GEM-621	6TM-D10
C24	200		1468-0002	TCZ-200	5W5T2	CM-19B-201M	MC237	1FM-320
C25	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C26	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S20
C27	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C28	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S20
C29	.5 150V		P288N-5		CUB2P5	2DP-5-504	GEM-205	2TM-P50
C30	100		1468-0002	TCZ-100	5W5T1	CM-19B-101M	MC235	1FM-310
C31	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C32	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C33	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C34	.05 600V		P688N-05	DD-503	CUB6S5	6DP-3-503	GEM-615	6TM-S50

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	REALISTIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	1meg							Volume, Left Channel
B	1meg							Volume, Right Channel
R2A	1meg			AB-70				Bass, Left Channel
B	Shaft			AK-29				
R3A	100K			AB-36				Treble, Left Channel
B	Shaft			AK-29				
R4A	1meg			AB-70				Bass, Right Channel
B	Shaft			AK-29				
R5A	100K			AB-36				Treble, Right Channel
B	Shaft			AK-29				
R6A	100Ω	2(WW)		WN-101	A43-100	W11-084	R100L	Hum Balance
B	Shaft			Not Req.	FKS-1/4	SK5	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R7	50K			
R8	200K			
R9	2200Ω			
R10	3meg			
R11	200K			
R12	330K			
R13	30K 1W			
R14	200K			
R15	3300Ω			
R16	1500Ω			
R17	5000Ω			
R18	10K			
R19	1meg			
R20	100K			
R21	3300Ω			
R22	100K			
R23	500K			
R24	500K			
R25	50K			
R26	200K			
R27	2200Ω			
R28	3meg			

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R29	200K			
R30	330K			
R31	200K			
R32	3300Ω			
R33	1500Ω			
R34	5000Ω			
R35	5000Ω			
R36	10K			
R37	1meg			
R38	100K			
R39	3300Ω			
R40	100K			
R41	500K			
R42	500K			
R43	220K 1W			
R44	30K 1W			
R45	500Ω 5W	PW5-500	5W-SQ-500	
R46	22K			
R47	15K 2W			
R48	10K 1W			
R49	5000Ω			

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	REALISTIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V@ .8A	480VCT @ .140A DC	6.3V@ 4.6A						
	SEC. 3	SEC. 4	SEC. 5						
	27V@ .001A DC								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	REALISTIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5000Ω CT	16Ω Tap@ 8Ω, 4Ω						
T3	5000Ω CT	16Ω Tap@ 8Ω, 4Ω						

POWER RECTIFIERS

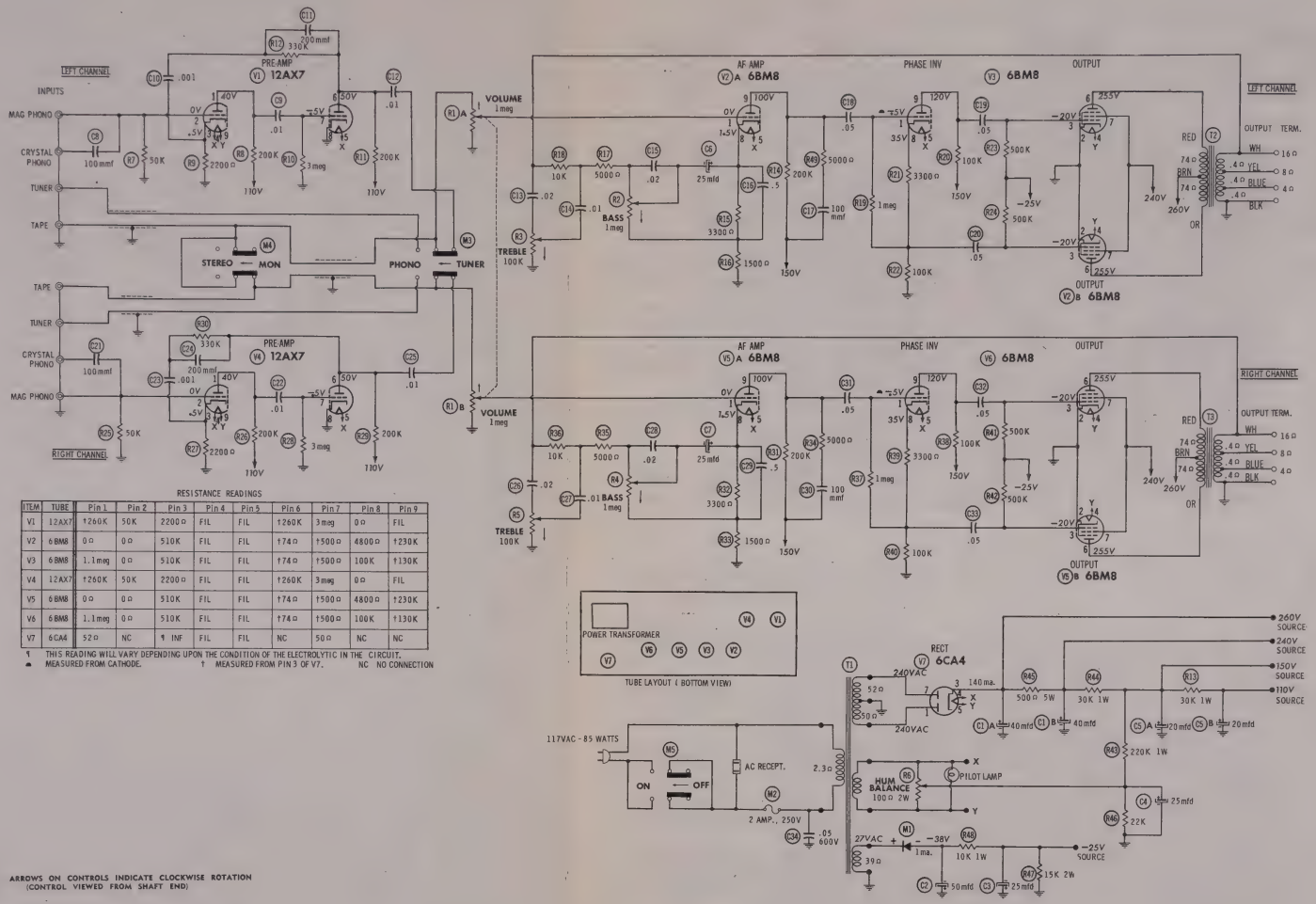
ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	REALISTIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.001A	*	1N1763 ♦	Model 50 *	SR200 ♦	* Selenium ♦ Silicon

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			REALISTIC PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	3AG	2A 250V			312002 (3AG 2A 250V)	357001	AGC 2	4405

MISCELLANEOUS

ITEM No.	PART NAME	REALISTIC PART No.	NOTES
M3	Switch		Phono-Tuner, Input Selector (DPDT Slide Type)
M4	Switch		Mono Stereo (DPDT Slide Type)
M5	Switch		Power Off-On (DPDT Slide Type)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†260K	50K	2200Ω	FIL	FIL	†260K	3meg	0Ω	FIL
V2	6BM8	0Ω	0Ω	510K	FIL	FIL	†74Ω	†500Ω	4800Ω	†230K
V3	6BM8	1.1meg	0Ω	510K	FIL	FIL	†74Ω	†500Ω	100K	†130K
V4	12AX7	†260K	50K	2200Ω	FIL	FIL	†260K	3meg	0Ω	FIL
V5	6BM8	0Ω	0Ω	510K	FIL	FIL	†74Ω	†500Ω	4800Ω	†230K
V6	6BM8	1.1meg	0Ω	510K	FIL	FIL	†74Ω	†500Ω	100K	†130K
V7	6CA4	52Ω	NC	¶ INF	FIL	FIL	NC	50Ω	NC	NC

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
▲ MEASURED FROM CATHODE. † MEASURED FROM PIN 3 OF V7. NC NO CONNECTION

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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REALISTIC MODEL SAF-24

PHOTOFACT® Folder with CIRCUITRACE*

WEBCOR MODEL R305

WEBCOR MODEL R305

WEBCOR MODEL R305

TRADE NAME	Webcor Model R305
MANUFACTURER	Webcor, Inc., 912 W. North Ave., Chicago 22, Illinois
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	9 Volts DC RATING 6MA @ 9 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	540 – 1600KC .12MA @ 9 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3, A5..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A4, A6..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400∿ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1600KC	1600KC	"	A4	"
3.	"	600KC	600KC	"	A5	"
4.	"	1400KC	1400KC Signal.	"	A6	Adjust for maximum output. Repeat Steps 2, 3 and 4.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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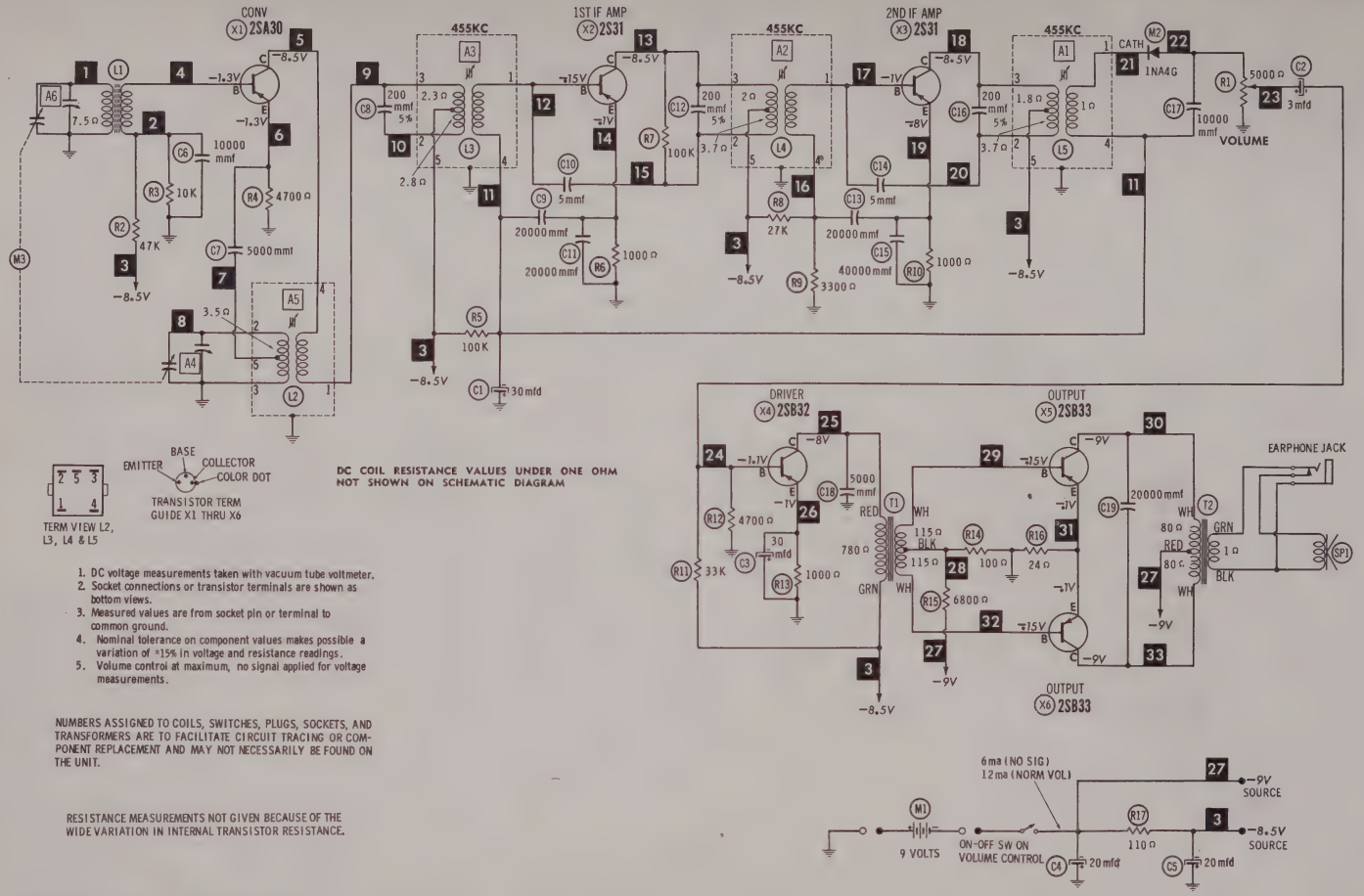
KF 574

SET 550 FOLDER 13



BASE
EMITTER
COLLECTOR
COLOR DOT

TRANSISTOR TERM GUIDE X1 THRU X6

TERM VIEW L2, L3, L4 & L5

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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WEBCOR MODEL R305

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2SA30	Converter				PNP
X2	2S31	1st IF Amplifier	2N410	2N483		PNP
X3	2S31	2nd IF Amplifier	2N410	2N483		PNP
X4	2SB32	Driver				PNP
X5	2SB33	Output				PNP
X6	2SB33	Output				PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	WEBCOR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	30	6		PTT27	NLW30-6	TT6X30	MLV30-6	TE-1092	
C2	3	6		PTT20	NLW3-25	TT6X3	MLV2-6	TE-1082	
C3	30	6		PTT27	NLW30-6	TT6X30	MLV30-6	TE-1092	
C4	20	10		PTT41	NLW20-15	TT15X20	MLV20-12	TE-1130	
C5	20	10		PTT41	NLW20-15	TT15X20	MLV20-12	TE-1130	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C7	5000		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C8	200 5%			DTZ-200			CNO-320	10TCC-T20
C9	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C10	5		NPO-SI 5.0	TCZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C11	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C12	200 5%			DTZ-200			CNO-320	10TCC-T20
C13	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C14	5		NPO-SI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C15	40000							
C16	200 5%			DTZ-200			CNO-320	10TCC-T20
C17	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C18	5000		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C19	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	WEBCOR PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/4						Volume & Switch

RESISTORS

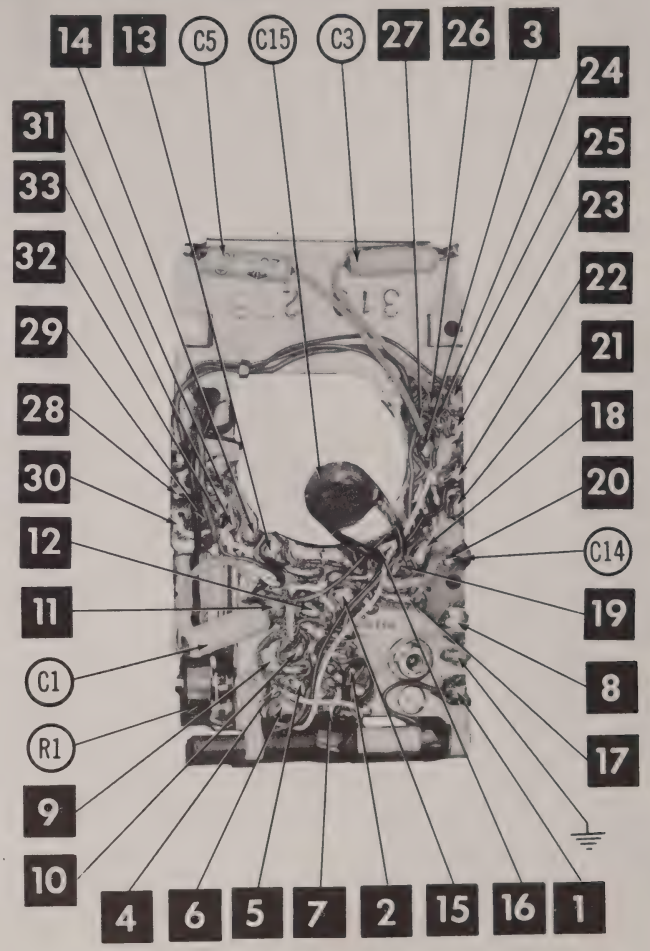
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			REMARKS
		IRC PART No.	WORKMAN TV PART No.		
R2	47K				
R3	10K				
R4	4700Ω				
R5	100K				
R6	1000Ω				
R7	100K				
R8	27K				
R9	3300Ω				

ITEM No.	RATING	REPLACEMENT DATA			REMARKS
		IRC PART No.	WORKMAN TV PART No.		
R10	1000Ω				
R11	33K				
R12	4700Ω				
R13	1000Ω				
R14	100Ω				
R15	6800Ω				
R16	24Ω				
R17	110Ω				

PRINTED BOARD

A Howard W. Sams CIRCUITRACE® Photo



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		WEBCOR PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Loopstick Oscillator						
L2	1st IF						
L3	2nd IF						
L4	3rd IF						
L5							

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	WEBCOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.4	1						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	WEBCOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	1000Ω CT	8-10Ω						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	WEBCOR PART No.	QUAM PART No.	
SP1	2"	PM	8-10Ω			

BATTERIES

ITEM No.	VOLTAGE	WEBCOR PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V	006P		2U6		216		M-1604	

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		WEBCOR PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1NA4G			1N34A	1N34A	Detector (Pigtail)

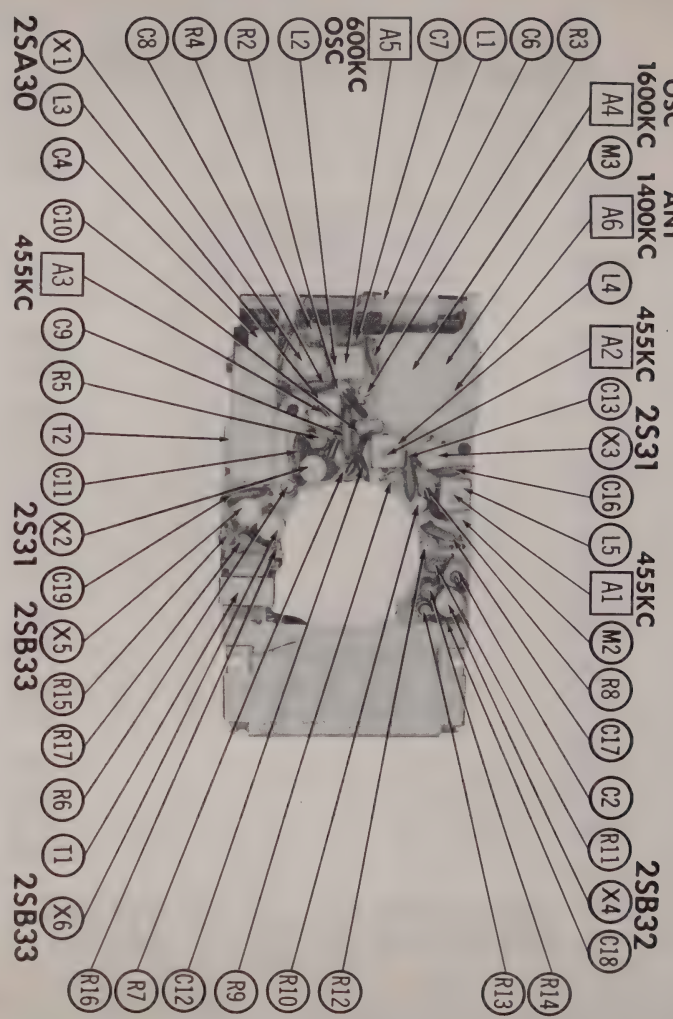
MISCELLANEOUS

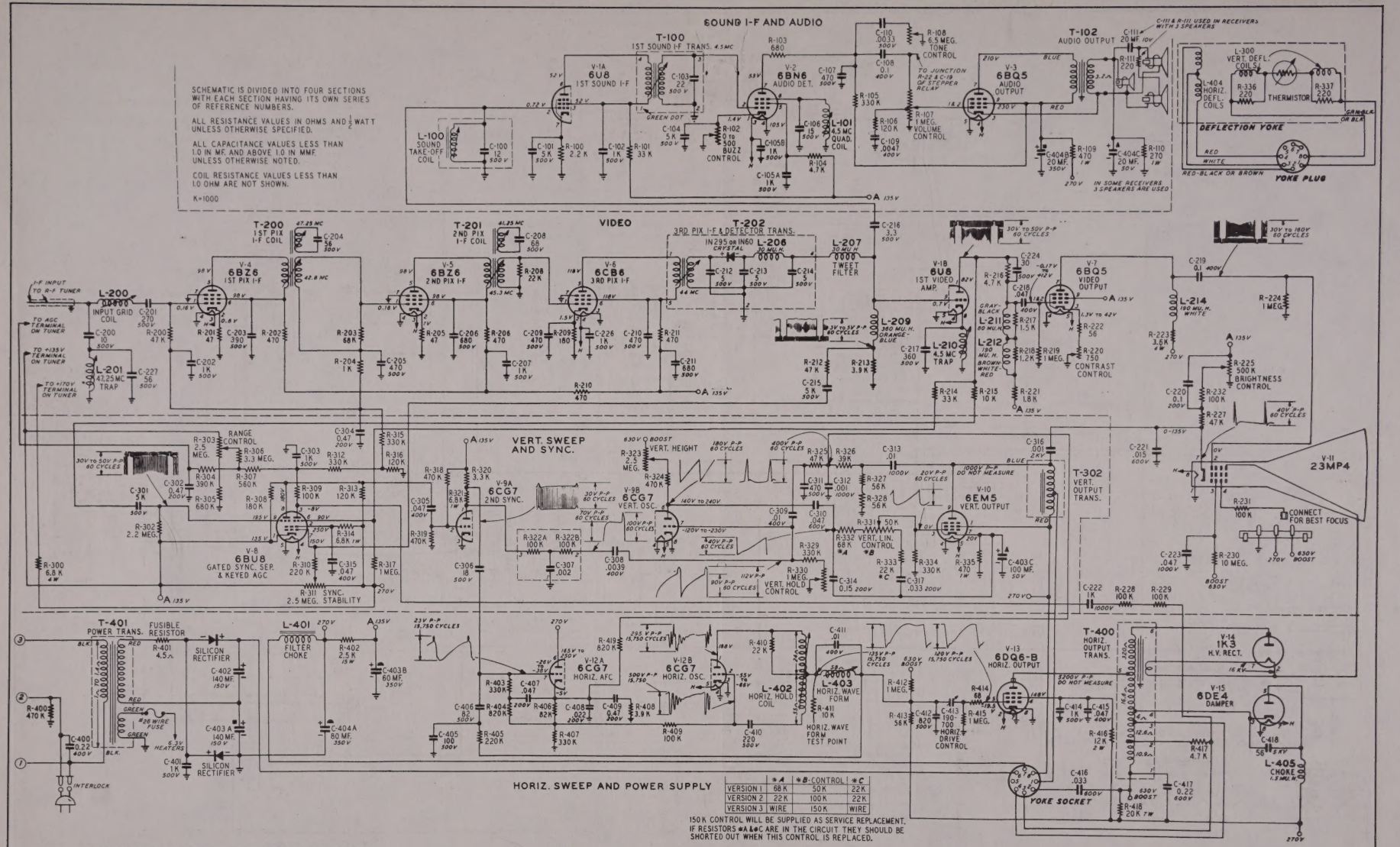
ITEM No.	PART NAME	WEBCOR PART No.	NOTES
M3	Tuning Cap.		2 Gang

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW



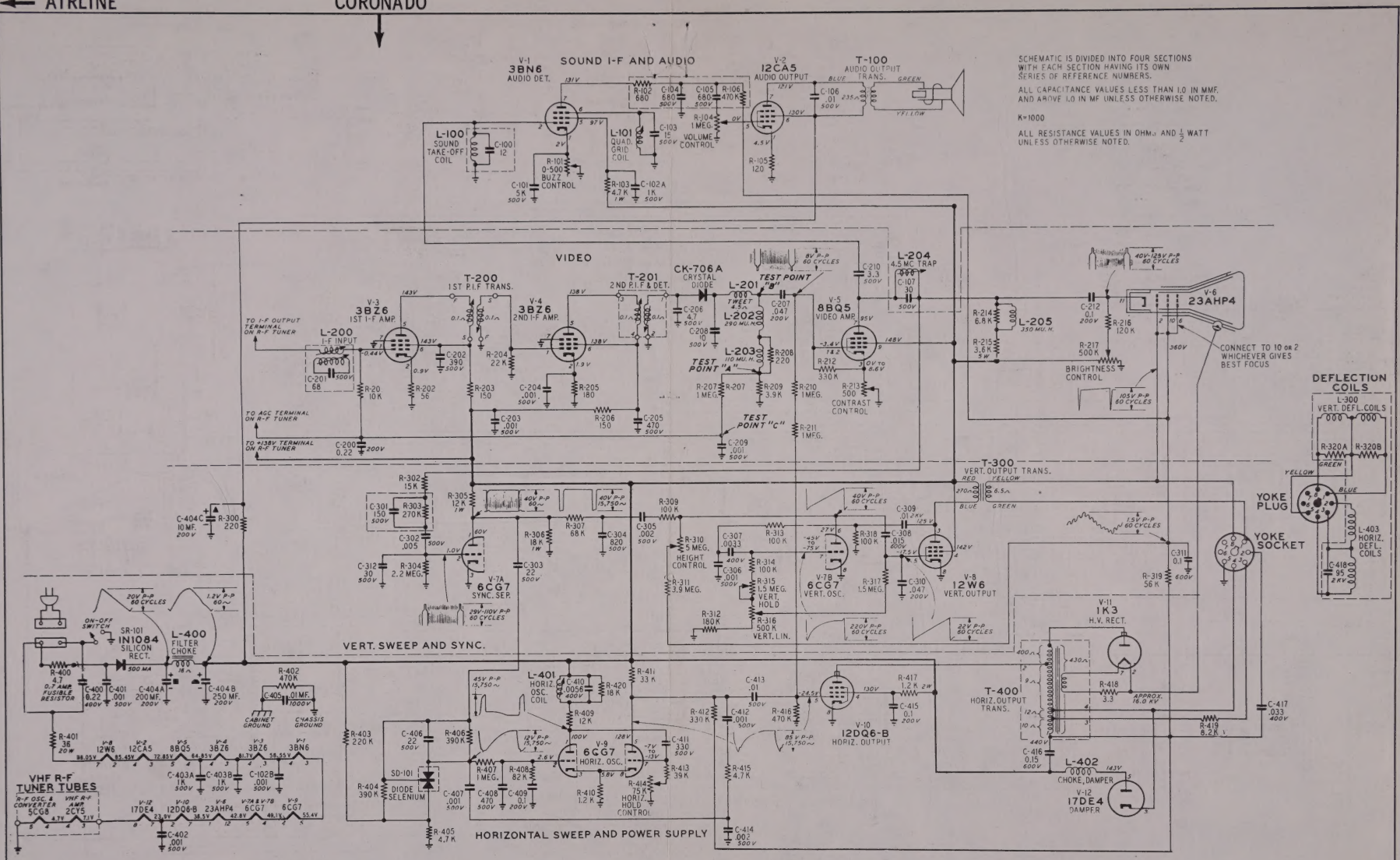

SOUND I-F AND AUDIO
VIDEO
VERT. SWEEP AND SYNC.
HORIZ. SWEEP AND POWER SUPPLY
SCHEMATIC IS DIVIDED INTO FOUR SECTIONS WITH EACH SECTION HAVING ITS OWN SERIES OF REFERENCE NUMBERS.
ALL RESISTANCE VALUES IN OHMS AND 1/2 WATT UNLESS OTHERWISE SPECIFIED.
ALL CAPACITANCE VALUES LESS THAN 1.0 IN MF. AND ABOVE 1.0 IN MMF. UNLESS OTHERWISE NOTED.
COIL RESISTANCE VALUES LESS THAN 1.0 OHM ARE NOT SHOWN.
K=1000
T-100 1ST SOUND I-F TRANS. 4.5 MC
V-1A 6U8 1ST SOUND I-F
V-2 6BN6 AUDIO DET.
T-102 AUDIO OUTPUT
V-3 6BQ5 AUDIO OUTPUT
L-100 SOUND TAKE-OFF COIL
L-101 4.5 MC QUAD. COIL
R-108 6.5 MEG. TONE CONTROL
R-109 VOLUME CONTROL
L-300 VERT. DEFL. COILS
L-404 HORIZ. DEFL. COILS
THERMISTOR
DEFLECTION YOKE
YOKE PLUG
T-200 1ST PIX I-F COIL 47.25 MC
T-201 2ND PIX I-F COIL 41.25 MC
T-202 3RD PIX I-F & DETECTOR TRANS.
V-4 6BZ6 1ST PIX I-F
V-5 6BZ6 2ND PIX I-F
V-6 6CB6 3RD PIX I-F
L-200 INPUT GRID COIL
L-201 47.25 MC TRAP
L-206 TWEET FILTER
L-207 TWEET FILTER
L-209 360 MU. H. ORANGE-BLUE
L-210 4.5 MC TRAP
L-211 80 MU. H.
L-212 190 MU. H. BROWN-WHITE-RED
L-214 190 MU. H. WHITE
V-1B 6U8 1ST VIDEO AMP.
V-7 6BQ5 VIDEO OUTPUT
R-225 500 K BRIGHTNESS CONTROL
R-220 750 CONTRAST CONTROL
V-11 23MP4
CONNECT FOR BEST FOCUS
V-8 6BU8 GATED SYNC. SEP. & KEYED AGC
V-9A 6CG7 2ND SYNC.
V-9B 6CG7 VERT. OSC.
V-10 6EM5 VERT. OUTPUT
T-302 VERT. OUTPUT TRANS.
R-303 RANGE CONTROL 2.5 MEG.
R-311 SYNC. 2.5 MEG. STABILITY
R-329 330 K VERT. HOLD CONTROL
R-332 VERT. LIN. CONTROL 50 K
R-330 1 MEG.
R-231 100 K
R-230 10 MEG.
T-401 POWER TRANS.
L-401 FILTER CHOKE
R-401 4.5 Ω
SILICON RECTIFIER
C-402 140 MF. 150 V
C-403A 140 MF. 150 V
C-403B 60 MF. 350 V
C-404A 60 MF. 350 V
C-401 1 K 500 V
SILICON RECTIFIER
INTERLOCK
#26 WIRE FUSE
6.3 V HEATERS
V-12A 6CG7 HORIZ. AFC.
V-12B 6CG7 HORIZ. OSC.
L-402 HORIZ. HOLD COIL
L-403 HORIZ. WAVE FORM
HORIZ. WAVE FORM TEST POINT
V-13 6DQ6-B HORIZ. OUTPUT
T-400 HORIZ. OUTPUT TRANS.
V-14 1K3 H.V. RECT.
V-15 6DE4 DAMPER
L-405 CHOKE 1.3 MH
YOKE SOCKET
*A 68 K
*B-CONTROL 50 K
*C 22 K
VERSION 1
VERSION 2 22 K 100 K 22 K
VERSION 3 WIRE 150 K WIRE
150 K CONTROL WILL BE SUPPLIED AS SERVICE REPLACEMENT. IF RESISTORS *A & *C ARE IN THE CIRCUIT THEY SHOULD BE SHORTED OUT WHEN THIS CONTROL IS REPLACED.

AIRLINE MODELS WG-5218A, WG-5219A

Schematic Diagram Courtesy of Montgomery Ward & Company

← AIRLINE

CORONADO


SOUND I-F AND AUDIO
V-1 3BN6 AUDIO DET.
V-2 12CA5 AUDIO OUTPUT
T-100 AUDIO OUTPUT TRANS.
L-100 SOUND TAKE-OFF COIL
L-101 QUAD. GRID COIL
R-101 0-500 BUZZ CONTROL
R-104 1 MEG. VOLUME CONTROL
VIDEO
T-200 1ST P.I.F. TRANS.
T-201 2ND P.I.F. & DET.
CK-706A CRYSTAL DIODE
L-201 TWEET 4.5
L-202 290 MU. H.
L-203 110 MU. H.
L-204 4.5 MC. TRAP
L-205 330 MU. H.
V-3 3BZ6 1ST I-F AMP.
V-4 3BZ6 2ND I-F AMP.
V-5 8BQ5 VIDEO AMP.
V-6 23AHP4
L-200 I-F INPUT
TO I-F OUTPUT TERMINAL ON R-F TUNER
TO AGC TERMINAL ON R-F TUNER
TO +13BV TERMINAL ON R-F TUNER
TEST POINT "A"
TEST POINT "B"
TEST POINT "C"
CONTRAST CONTROL
BRIGHTNESS CONTROL
CONNECT TO 10 OR 2 WHICHEVER GIVES BEST FOCUS
DEFLECTION COILS
L-300 VERT. DEFL. COILS
L-403 HORIZ. DEFL. COILS
YOKE PLUG
YOKE SOCKET
T-300 VERT. OUTPUT TRANS.
V-7A 6CG7 SYNC. SEP.
V-7B 6CG7 VERT. OSC.
V-8 12W6 VERT. OUTPUT
R-316 500 K VERT. LIN.
R-315 1.5 MEG. VERT. HOLD
R-310 5 MEG. HEIGHT CONTROL
VERT. SWEEP AND SYNC.
V-11 1K3 H.V. RECT.
T-400 HORIZ. OUTPUT TRANS.
V-10 12DQ6-B HORIZ. OUTPUT
L-402 CHOKE, DAMPER
V-12 17DE4 DAMPER
L-401 HORIZ. OSC. COIL
V-9 6GG7 HORIZ. OSC.
R-414 15 K HORIZ. HOLD CONTROL
SD-101 DIODE SELENIUM
HORIZONTAL SWEEP AND POWER SUPPLY
SR-101 1N1084 SILICON RECT.
L-400 FILTER CHOKE
ON-OFF SWITCH
0.7 AMP FUSIBLE RESISTOR
CABINET GROUND
CHASSIS GROUND
VHF R-F TUNER TUBES
R-F OSC. & CONVERTER 5CG8
VHF R-F AMP. 2CY5
V-12 17DE4
V-10 12DQ6-B
V-4 23AHP4
V-7A & V-7B 6CG7
V-9 6CG7
C-402 .001 500V
SCHEMATIC IS DIVIDED INTO FOUR SECTIONS WITH EACH SECTION HAVING ITS OWN SERIES OF REFERENCE NUMBERS.
ALL CAPACITANCE VALUES LESS THAN 1.0 IN MMF. AND ABOVE 1.0 IN MF UNLESS OTHERWISE NOTED.
K=1000
ALL RESISTANCE VALUES IN OHMS AND 1/2 WATT UNLESS OTHERWISE NOTED.

CORONADO MODELS TV2-9624A, TV2-9626A, TV2-9628A

Schematic Diagram Courtesy of Gamble-Skogmo, Inc.

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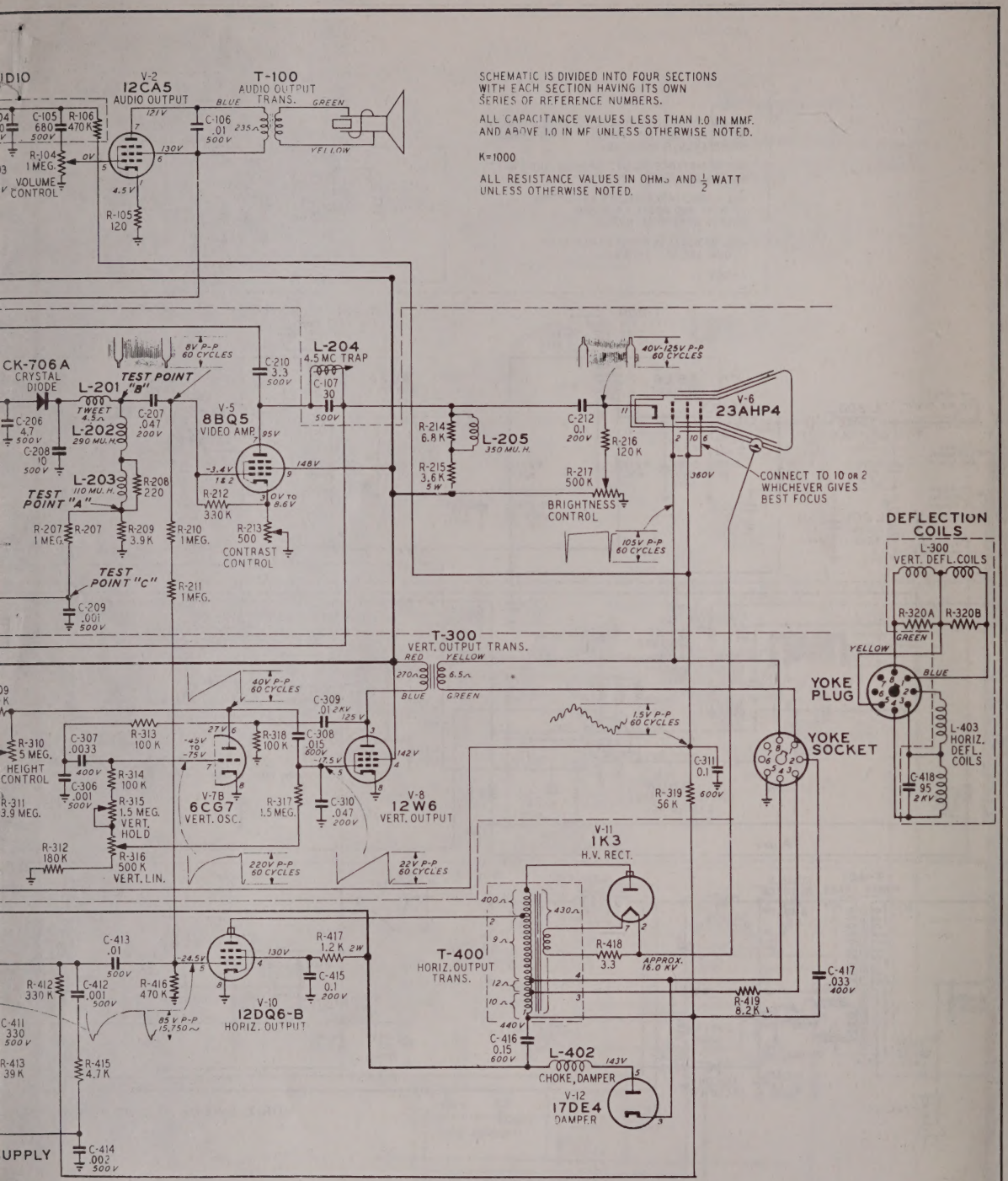
SET 550 FOLDER 14-S



Schematic Diagram Courtesy of Gamble-Skogmo, Inc.